



SEQUENCE LISTING

(1) GENERAL INFORMATION

(i) APPLICANT: Yelton, Dale E.
Rosok, Mae Joanne

(ii) TITLE OF THE INVENTION: A METHOD FOR INHIBITING IMMUNOGLOBULIN-
INDUCED

TOXICITY RESULTING FROM THE USE OF IMMUNOGLOBULINS
IN THERAPY AND IN VIVO DIAGNOSIS

(iii) NUMBER OF SEQUENCES: 29

(iv) CORRESPONDENCE ADDRESS:

- (A) ADDRESSEE: Bristol-Myers Squibb Company
- (B) STREET: P.O. Box 4000
- (C) CITY: Princeton
- (D) STATE: NJ
- (E) COUNTRY: USA
- (F) ZIP: 08543

(v) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: CD-ROM
- (B) COMPUTER: IBM Compatible
- (C) OPERATING SYSTEM: WINDOWS.
- (D) SOFTWARE: PatentIn

(vi) CURRENT APPLICATION DATA:

- (A) APPLICATION NUMBER: 08/905,293
- (B) FILING DATE: 01-AUG-1997
- (C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

- (A) APPLICATION NUMBER: 60/023,033
- (B) FILING DATE: 02-AUG-1996

(viii) ATTORNEY/AGENT INFORMATION:

- (A) NAME: Carey, Brian
- (B) REGISTRATION NUMBER: 44,590
- (C) REFERENCE/DOCKET NUMBER: ON0146A

(ix) TELECOMMUNICATION INFORMATION:

- (A) TELEPHONE: 609-252-3883
- (B) TELEFAX: 609-252-4526
- (C) TELEX:

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid

BEST AVAILABLE COPY

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

TGGCACCGAA AGCTTTCTGG GGCAGGCCAG GCCTGA

36

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 57 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

TCCGGACATG TTGGTACCCA CGTGGTGGTC GACGCTGAGC CTGGCTTCGA GCAGACA

57

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 55 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GTCGACCACC ACGTGGGTAC CAACATGTCC GGAGCCACAT GGACAGAGGC CGGCT

55

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

CTGGTTCTTG TTCATCTCCT CTCTAGATGG

30

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

ACCATGGTCG ACCTCAGACC TGCCAAGAGC CATATC

36

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 40 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CATGGTCACG TGGTGTGTCC CTGGATGCAG GCTACTCTAG

40

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 49 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

CAGGGAGGGA GGGTGTCTGC TGGAAGCCAG GCTCAGCGCT GACCTCAGA

49

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 50 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

GGAAAGAACC ATCAGAGTCT CGCAGGGGCC CAGGGCAGCG CTGGGTGCTT

50

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8691 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GACGGATCGG	GAGATCTGCT	AGGTGACCTG	AGGCGCGCCG	GCTTCGAATA	GCCAGAGTAA	60
CCTTTTTTTT	TAATTTTATT	TTATTTTATT	TTTGAGATGG	AGTTTGCGCG	CGATCTCCCG	120
ATCCCCTATG	GTCGACTCTC	AGTACAATCT	GCTCTGATGC	CGCATAGTTA	AGCCAGTATC	180
TGCTCCCTGC	TTGTGTGTTG	GAGGTCGCTG	AGTAGTGC GC	GAGCAAAATT	TAAGCTACAA	240
CAAGGCAAGG	CTTGACCGAC	AATTGCATGA	AGAATCTGCT	TAGGGTTAGG	CGTTTTGCGC	300
TGCTTCGCGA	TGTACGGGCC	AGATATACGC	GTTGACATTG	ATTATTGACT	AGTTATTAAT	360
AGTAATCAAT	TACGGGGTCA	TTAGTTTCATA	GCCCCATATAT	GGAGTTCCGC	GTTACATAAC	420
TTACGGTAAA	TGGCCCCGCT	GGCTGACCGC	CCAACGACCC	CCGCCCATTG	ACGTCAATAA	480
TGACGTATGT	TCCCATAGTA	ACGCCAATAG	GGACTTTCCA	TTGACGTCAA	TGGGTGGACT	540
ATTTACGGTA	AACTGCCCCAC	TTGGCAGTAC	ATCAAGTGTA	TCATATGCCA	AGTACGCCCC	600
CTATTGACGT	CAATGACGGT	AAATGGCCCC	CCTGGCATTA	TGCCCAGTAC	ATGACCTTAT	660
GGGACTTTCC	TACTTGGCAG	TACATCTACG	TATTAGTCAT	CGCTATTACC	ATGGTGATGC	720
GGTTTTGGCA	GTACATCAAT	GGGCGTGGAT	AGCGGTTTGA	CTCACGGGGA	TTTCCAAGTC	780
TCCACCCCAT	TGACGTCAAT	GGGAGTTTGT	TTTGGCACCA	AAATCAACGG	GACTTTCCAA	840
AATGTCGTAA	CAACTCCGCC	CCATTGACGC	AAATGGGCGG	TAGGCGTGTA	CGGTGGGAGG	900
TCTATATAAG	CAGAGCTCTC	TGGCTAACTA	GAGAACCCAC	TGCTTACTGG	CTTATCGAAA	960
TTAATACGAC	TCACTATAGG	GAGACCCAAG	CTTGGTACCA	ATTTAAATTG	ATATCTCCTT	1020
AGGTCTCGAG	TCTCTAGATA	ACCGGTCAAT	CGATTGGAAT	TCTTGCGGCC	GCTTGCTAGC	1080
CACCATGGAG	TTGTGGTTAA	GCTTGGTCCT	TCCTTGTCTT	TGTTTTAAAA	GGTGTCAGT	1140
GTGAAGTGAA	TCTGGTGGAG	TCTGGGGGAG	GCTTAGTGCA	GCCTGGAGGG	TCCCTGAAAG	1200
TCTCCTGTGT	AACCTCTGGA	TTCACTTTCA	GTGACTATTA	CATGTATTGG	GTTCGCCAGA	1260
CTCCAGAGAA	GAGGCTGGAG	TGGGTCGCAT	ACATTAGTCA	AGGTGGTGAT	ATAACCGACT	1320
ATCCAGACAC	TGTAAAGGGT	CGATTCACCA	TCTCCAGAGA	CAATGCCAAG	AACACCCTGT	1380
ACCTGCAAAAT	GAGCCGTCTG	AAGTCTGAGG	ACACAGCCAT	GTATTACTGT	GCAAGAGGCC	1440
TGGACGACGG	GGCCTGGTTT	GCTTACTGGG	GCCAAGGGAC	TCTGGTCACG	GTCTCTGTAG	1500
CTAGCACCAA	GGGCCCATCG	GTCTTCCCCC	TGGCACCCCTC	CTCCAAGAGC	ACCTCTGGGG	1560
GCACAGCGGC	CCTGGGCTGC	CTGGTCAAGG	ACTACTTCCC	CGAACCGGTG	ACGGTGTCGT	1620
GGAACTCAGG	CGCCCTGACC	AGCGGCGTGC	ACACCTTCCC	GGCTGTCTTA	CAGTCTCTCAG	1680
GACTCTACTC	CCTCAGCAGC	GTGGTCACCG	TGCCCTCCAG	CAGCTTGGGC	ACCCAGACCT	1740
ACATCTGCAA	CGTGAATCAC	AAGCCAGCA	ACACCAAGGT	GGACAAGAAA	GTGGGTGAGA	1800
GGCCAGCACA	GGGAGGGAGG	GTGTCTGCTG	GAAGCCAGGC	TCAGCGCTCC	TGCTTGACG	1860
CATCCCGGCT	ATGCAGCCCC	AGTCCAGGGC	AGCAAGGCAG	GCCCCGTCTG	CCTCTTCACC	1920
CGGAGGCCTC	TGCCCCGCCC	ACTCATGCTC	AGGGAGAGGG	TCTTCTGGCT	TTTTCCCCAG	1980
GCTCTGGGCA	GGCACAGGCT	AGGTGCCCTT	AACCCAGGCC	CTGCACACAA	AGGGGCAGGT	2040
GCTGGGCTCA	GACCTGCCAA	GAGCCATATC	CGGGAGGACC	CTGCCCCCTGA	CCTAAGCCCA	2100
CCCCAAAGGC	CAAACCTCTC	ACTCCCTCAG	CTCGGACACC	TTCTCTCCTC	CCAGATTCCA	2160
GTAACCTCCA	ATCTTCTCTC	TGCAGAGCCC	AAATCTTGTG	ACAAAACCTCA	CACATGCCCA	2220
CCGTGCCCCAG	GTAAGCCAGC	CCAGGCCTCG	CCCTCCAGCT	CAAGGCGGGA	CAGGTGCCCT	2280
AGAGTAGCCT	GCATCCAGGG	ACAGGCCCCA	GCCGGGTGCT	GACACGTCCA	CCTCCATCTC	2340
TTCTCTAGCA	CCTGAACCTC	TGGGGGGACC	GTCAGTCTTC	CTCTTCCCCC	CAAAACCCAA	2400
GGACACCCTC	ATGATCTCCC	GGACCCCTGA	GGTCACATGC	GTGGTGGTGG	ACGTGAGCCA	2460
CGAAGACCCT	GAGGTCAAAGT	TCAAATGGTA	CGTGACGGC	GTGGAGGTGC	ATAATGCCAA	2520
GACAAAGCCG	CGGGAGGAGC	AGTACAACAG	CACGTACCGT	GTGGTCAGCG	TCCTCACCGT	2580
CCTGCACCAG	GACTGGCTGA	ATGGCAAGGA	GTACAAGTGC	AAGGTCTCCA	ACAAAGCCCT	2640
CCCAGCCCCC	ATCGAGAAAA	CCATCTCCAA	AGCCAAAGGT	GGGACCCGTG	GGGTGCGAGG	2700
GCCACATGGA	CAGAGGCCGG	CTCGGCCAC	CCTCTGCCCT	GAGAGTGACC	GCTGTACCAA	2760
CCTCTGTCCC	TACAGGGCAG	CCCCGAGAAC	CACAGGTGTA	CACCCTGCCC	CCATCCCGGG	2820
ATGAGCTGAC	CAAGAACCAG	GTCAGCCTGA	CCTGCCTGGT	CAAAGGCTTC	TATCCCAGCG	2880
ACATCGCCGT	GGAGTGGGAG	AGCAATGGGC	AGCCGGAGAA	CAACTACAAG	ACCACGCCCTC	2940
CCGTGCTGGA	CTCCGACGGC	TCCTTCTTCC	TCTACAGCAA	GCTCACCCTG	GACAAGAGCA	3000
GGTGGCAGCA	GGGGAACGTC	TTCTCATGCT	CCGTGATGCA	TGAGGCTCTG	CACAACCACT	3060
ACACGCAGAA	GAGCCTCTCC	CTGTCTCCGG	GTAAATGAGT	GCGACGGCCG	GCAAGCCCCC	3120

GCTCCCCGGG	CTCTCGCGGT	CGCACGAGGA	TGCTTGGCAC	GTACCCCCTG	TACATACTTC	3180
CCGGGCGCCC	AGCATGGAAA	TAAAGCACCC	AGCGCTGCCC	TGGGCCCCCTG	CGAGACTGTG	3240
ATGGTTCTTT	CCACGGGTCA	GGCCGAGTCT	GAGGCTGAG	TGGCATGAGG	GAGGCAGAGC	3300
GGGTCCCACT	GTCCCCACAC	TGGCCCAGGC	TGTGCAGGTG	TGCCTGGGCC	CCCTAGGGTG	3360
GGGCTCAGCC	AGGGGCTGCC	CTCGGCAGGG	TGGGGGATTT	GCCAGCGTGG	CCCTCCCTCC	3420
AGCAGCACCT	GCCCTGGGCT	GGGCCACGGG	AAGCCCTAGG	AGCCCCTGGG	GACAGACACA	3480
CAGCCCCTGC	CTCTGTAGGA	GACTGTCCTG	TTCTGTGAGC	GGCCCTGTCC	TCCCCGACCTC	3540
CATGCCCACT	CGGGGGCATG	CCTAGTCCAT	GTGCGTAGGG	ACAGGCCCTC	CCTCACCCAT	3600
CTACCCCCAC	GGCACTAACC	CCTGGCTGCC	CTGCCCAGCC	TCGCACCCGC	ATGGGGACAC	3660
AACCGACTCC	GGGGACATGC	ACTCTCGGGC	CCTGTGGAGG	GACTGGTGCA	GATGCCACACA	3720
CACACACTCA	GCCCAGACCC	GTTCAACAAA	CCCCGCACTG	AGGTTGGCCG	GCCACACGGC	3780
CACCACACAC	ACACGTGCAC	GCCTCACACA	CGGAGCCTCA	CCCGGGCGAA	CTGCACAGCA	3840
CCCAGACCAG	AGCAAGGTCC	TCGCACACGT	GAACACTCCT	CGGACACAGG	CCCCCACGAG	3900
CCCCACGCGG	CACCTCAAGG	CCCACGAGCC	TCTCGGCAGC	TTCTCCACAT	GCTGACCTGC	3960
TCAGACAAAC	CCAGCCCTCC	TCTCACAAGG	GTGCCCCTGC	AGCCGCCACA	CACACACAGG	4020
GGATCACACA	CCACGTCACG	TCCCTGGCCC	TGGCCCCTT	CCCAGTGCCG	CCCTTCCCTG	4080
CAGGACGGAT	CAGCCTCGAC	TGTGCCTTCT	AGTTGCCAGC	CATCTGTTGT	TTGCCCCCTC	4140
CCCGTGCCCT	CCTTGACCCT	GGAAGGTGCC	ACTCCCACATG	TCCTTTCCCTA	ATAAAAATGAG	4200
GAAATTGCAAT	CGCATTTGTCT	GAGTAGGTGT	CATTCTATTC	TGGGGGGTGG	GGTGGGGCAG	4260
GACAGCAAGG	GGGAGGATTG	GGAAGACAAT	AGCAGGCATG	CTGGGGATGC	GGTGGGCTCT	4320
ATGGCTTCTG	AGGCGGAAAG	AACCAGCTGG	GGCTCTAGGG	GGTATCCCCA	CGCGCCCTGT	4380
AGCGGCGCAT	TAAGCGCGGC	GGGTGTGGTG	GTTACGCGCA	CGGTGACCGC	TACACTTGCC	4440
AGCGCCCTAG	CGCCCGCTCC	TTTCGCTTTC	TTCCCTTCCT	TTCTCGCCAC	GTTGCGCCGG	4500
CCTCTCAAAA	AAGGGAAAAA	AAGCATGCAT	CTCAATTAGT	CAGCAACCAT	AGTCCCGCCC	4560
CTAACTCCGC	CCATCCCGCC	CCTAACTCCG	CCGAGTCCG	CCCATTCTCC	GCCCCATGGC	4620
TGACTAATTT	TTTTTATTTA	TGCAGAGGCC	GAGGCGCCCT	CGGCCCTCTGA	GCTATTCCAG	4680
AAGTAGTGAG	GAGGCTTTTT	TGGAGGCCTA	GGCTTTTGTCA	AAAAGCTTGG	ACAGCTCAGG	4740
GCTGCGATTT	GCGGCCAAAC	TTGACGGCAA	TCCTAGCGTG	AAGGCTGGTA	GGATTTTATC	4800
CCCGCTGCCA	TCATGGTTTCG	ACCATTGAAC	TGATCGTCG	CCGTGTGGCA	AAATATGGGG	4860
ATTGGCAAGA	ACGGAGACCT	ACCCTGGCCT	CCGCTCAGGA	ACGAGTTCAA	GTACTTCCAA	4920
TAGAATGACCA	CAACCTCTTC	AGTGGAAGGT	AAACAGAATC	TGGTGATTAT	GGGTAGGAAA	4980
ACCTGGTTCT	CCATTCTCTGA	GAAGAATCGA	CCTTTAAAGG	ACAGAATTAA	TATAGTTCTC	5040
AGTAGAGAAC	TCAAAGAACC	ACCACGAGGA	GCTCATTTTC	TTGCCAAAAG	TTTGGATGAT	5100
GCCTTAAGAC	TTATTGAACA	ACCGGAATTG	GCAAGTAAAG	TAGACATGGT	TTGGATAGTC	5160
GGAGGCAGTT	CTGTTTACCA	GGAAGCCATG	AATCAACCAG	GCCACCTTAG	ACTCTTTGTG	5220
ACAAGGATCA	TGCAGGAATT	TGAAAGTGAC	ACGTTTTTCC	CAGAAATTGA	TTTGGGGAAA	5280
TATAAACTTC	TCCCAGAATA	CCCAGGCGTC	CTCTCTGAGG	TCCAGGAGGA	AAAAGGCATC	5340
AAGTATAAGT	TTGAAGTCTA	CGAGAAGAAA	GACTAACAGG	AAGATGCTTT	CAAGTTCTCT	5400
GCTCCCCCTC	TAAAGCTATG	CATTTTATATA	AGACCATGGG	ACTTTTGCTG	GCTTTAGATC	5460
TCTTTGTGAA	GGAACCTTAC	TTCTGTGGTG	TGACATAATT	GGACAACTA	CCTACAGAGA	5520
TTTAAAGCTC	TAAGGTAAAT	ATAAAATTTT	TAAGTGATATA	ATGTGTTAAA	CTACTGATTC	5580
TAATTGTTTG	TGTATTTTAG	ATTCCAACCT	ATGGAACCTGA	TGAATGGGAG	CAGTGGTGGA	5640
ATGCCTTTAA	TGAGGAAAAC	CTGTTTTGCT	CAGAAGAAAT	GCCATCTAGT	GATGATGAGG	5700
CTACTGCTGA	CTCTCAACAT	TCTACTCCTC	CAAAAAGAA	GAGAAAGGTA	GAAGACCCCA	5760
AGGACTTTCC	TTCAGAATTG	CTAAGTTTTT	TGAGTCATGC	TGTGTTTAGT	AATAGAACTC	5820
TTGCTTGCTT	TGCTATTTTAC	ACCACAAAGG	AAAAAGCTGC	ACTGCTATAC	AAGAAAAATTA	5880
TGGAAAAATA	TTCTGTAAACC	TTTATAAGTA	GGCATAACAG	TTATAATCAT	AACATACTGT	5940
TTTTTCTTAC	TCCACACAGG	CATAGAGTGT	CTGCTATTAA	TAACTATGCT	CAAAAATTGT	6000
GTACCTTTAG	CTTTTAAATT	TGTAAAGGGG	TTAATAAGGA	ATATTTGATG	TATAGTGCCT	6060
TGACTAGAGA	TCATAATCAG	CCATACCACA	TTTGTAGAGG	TTTTACTTGC	TTTAAAAAAC	6120
CTCCCACACC	TCCCCCTGAA	CCTGAAACAT	AAAAATGAATG	CAATTGTTGT	TGTTAACTTG	6180
TTTATTGCAG	CTTATAATGG	TTACAAATAA	AGCAATAGCA	TCACAAATTT	CACAAATAAA	6240
GCATTTTTTTT	CACTGCATTTC	TAGTTGTGGT	TTGTCCAAAC	TCATCAATGT	ATCTTATCAT	6300
GTCTGGATCG	GCTGGATGAT	CCTCCAGCGC	GGGGATCTCA	TGCTGGAGTT	CTTCGCCCAC	6360
CCCAACTTGT	TTATTGCAGC	TTATAATGGT	TACAAATAAA	GCAATAGCAT	CACAAATTTTC	6420
ACAAATAAAG	CATTTTTTTTC	ACTGCATTCT	AGTTGTGGTT	TGTCCAAACT	CATCAATGTA	6480
TCTTATCATG	TCTGTATACC	GTCGACCTCT	AGCTAGAGCT	TGGCGTAATC	ATGGTCATAG	6540

CTGTTTCCTG	TGTGAAATTG	TTATCCGCTC	ACAATTCCAC	ACAACATACG	AGCCGGAAGC	6600
ATAAAGTGTA	AAGCCTGGGG	TGCCTAATGA	GTGAGCTAAC	TCACATTAAT	TGCGTTGCGC	6660
TCACTGCCCCG	CTTTCAGTC	GGGAAACCTG	TCGTGCCAGC	TGCATTAATG	AATCGGCCAA	6720
CGCGCGGGGA	GAGGCGGTTT	GCGTATTGGG	CGCTCTTCCG	CTTCTCGCT	CACTGACTCG	6780
CTGCGCTCGG	TCGTTCCGGCT	GCGGCGAGCG	GTATCAGCTC	ACTCAAAGGC	GGTAATACGG	6840
TTATCCACAG	AATCAGGGGA	TAACGCAGGA	AAGAACATGT	GAGCAAAAGG	CCAGCAAAAG	6900
GCCAGGAACC	GTAAAAAGGC	CGCGTTGCTG	GCGTTTTTCC	ATAGGCTCCG	CCCCCTGAC	6960
GAGCATCACA	AAAATCGACG	CTCAAGTCAG	AGGTGGCGAA	ACCCGACAGG	ACTATAAAGA	7020
TACCAGGCGT	TTCCCCCTGG	AAGCTCCCTC	GTGCGCTCTC	CTGTTCCGAC	CCTGCCGCTT	7080
ACCGGATACC	TGTCCGCCCTT	TCTCCCTTCG	GGAAGCGTGG	CGCTTTCTCA	ATGCTCACGC	7140
TGTAGGTATC	TCAGTTCGGT	GTAGGTCGTT	CGCTCCAAGC	TGGGCTGTGT	GCACGAACCC	7200
CCCGTTTCAGC	CCGACCGCTG	CGCCTTATCC	GGTAACTATC	GTCTTGAGTC	CAACCCGGTA	7260
AGACACGACT	TATCGCCACT	GGCAGCAGCC	ACTGGTAACA	GGATTAGCAG	AGCGAGGTAT	7320
GTAGGCGGTG	CTACAGAGTT	CTTGAAGTGG	TGGCCTAACT	ACGGCTACAC	TAGAAGGACA	7380
GTATTTGGTA	TCTGCGCTCT	GCTGAAGCCA	GTTACCTTCG	GAAAAAGAGT	TGGTAGCTCT	7440
TGATCCGGCA	AACAAACCAC	CGCTGGTAGC	GGTGGTTTTT	TTGTTTGCAA	GCAGCAGATT	7500
ACGCGCAGAA	AAAAAGGATC	TCAAGAAGAT	CCTTTGATCT	TTTCTACGGG	GTCTGACGCT	7560
CAGTGGAACG	AAAACTCACG	TTAAGGGATT	TTGGTCATGA	GATTATCAAA	AAGGATCTTC	7620
ACCTAGATCC	TTTTAAATTA	AAAATGAAGT	TTTAAATCAA	TCTAAAGTAT	ATATGAGTAA	7680
ACTTGGTCTG	ACAGTTACCA	ATGCTTAATC	AGTGAGGCAC	CTATCTCAGC	GATCTGTCTA	7740
TTTCGTTTCAT	CCATAGTTGC	CTGACTCCCC	GTCGTGTAGA	TAACTACGAT	ACGGGAGGGC	7800
TTACCATCTG	GCCCCAGTGC	TGCAATGATA	CCGCGAGACC	CACGCTCACC	GGCTCCAGAT	7860
TTATCAGCAA	TAAACCAGCC	AGCCGGAAGG	GCCGAGCGCA	GAAGTGGTCC	TGCAACTTTA	7920
TCCGCCTCCA	TCCAGTCTAT	TAATTGTTGC	CGGGAAGCTA	GAGTAAGTAG	TTCGCCAGTT	7980
AATAGTTTGC	GCAACGTTGT	TGCCATTGCT	ACAGGCATCG	TGGTGTACAG	CTCGTCGTTT	8040
GGTATGGCTT	CATTACGCTC	CGGTTCCCAA	CGATCAAGGC	GAGTTACATG	ATCCCCCATG	8100
TTGTGCAAAA	AAGCGGTTAG	CTCCTTCGGT	CCTCCGATCG	TTGTCAGAAAG	TAAGTTGGCC	8160
GCAGTGTTAT	CACTCATGGT	TATGGCAGCA	CTGCATAATT	CTCTTACTGT	CATGCCATCC	8220
GTAAGATGCT	TTTCTGTGAG	TGGTGAGTAC	TCAACCAAGT	CATTCTGAGA	ATAGTGATAG	8280
CGGCGACCGA	GTTGCTCTTG	CCCGGCGTCA	ATACGGGATA	ATACCGCGCC	ACATAGCAGA	8340
ACTTTAAAG	TGCTCATCAT	TGGAAAACGT	TCTTCGGGGC	GAAAACTCTC	AAGGATCTTA	8400
CCGCTGTTGA	GATCCAGTTC	GATGTAACCC	ACTCGTGCAC	CCAACTGATC	TTCAGCATCT	8460
TTTACTTTCA	CCAGCGTTTC	TGGGTGAGCA	AAAACAGGAA	GGCAAAATGC	CGCAAAAAAG	8520
GGAATAAGGG	CGACACGGAA	ATGTTGAATA	CTCATACTCT	TCCTTTTTCA	ATATTATTGA	8580
AGCATTATATC	AGGGTTATTG	TCTCATGAGC	GGATACATAT	TTGAATGTAT	TTAGAAAAAT	8640
AAACAAATAG	GGGTTCCGCG	CACATTTCCT	CGAAAAGTGC	CACCTGACGT	C	8691

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8321 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

GACGGATCGG	GAGATCTGCT	AGGTGACCTG	AGGCGCGCCG	GCTTCGAATA	GCCAGAGTAA	60
CCTTTTTTTT	TAATTTTATT	TTATTTTATT	TTTGAGATGG	AGTTTGGCGC	CGATCTCCCG	120
ATCCCCTATG	GTCGACTCTC	AGTACAATCT	GCTCTGATGC	CGCATAGTTA	AGCCAGTATC	180
TGCTCCCTGC	TTGTGTGTTG	GAGGTCGCTG	AGTAGTGCGC	GAGCAAAATT	TAAGCTACAA	240
CAAGGCAAGG	CTTGACCGAC	AATTGCATGA	AGAATCTGCT	TAGGGTTAGG	CGTTTTGCGC	300
TGCTTCGCGA	TGTACGGGCC	AGATATACGC	GTTGACATTG	ATTATTGACT	AGTTATTAAT	360
AGTAATCAAT	TACGGGGTCA	TTAGTTTATA	GCCCATATAT	GGAGTTCCGC	GTTACATAAC	420
TTACGGTAAA	TGGCCCCCCT	GGCTGACCGC	CCAACGACCC	CCGCCATTG	ACGTCAATAA	480

TGACGTATGT	TCCCATAGTA	ACGCCAATAG	GGACTTTCCA	TTGACGTCAA	TGGGTGGACT	540
ATTTACGGTA	AACTGCCCC	TTGGCAGTAC	ATCAAGTGTA	TCATATGCCA	AGTACGCCCC	600
CTATTGACGT	CAATGACGGT	AAATGGCCCC	CTGGCATTAT	TGCCCAGTAC	ATGACCTTAT	660
GGGACTTTCC	TACTTGGCAG	TACATCTACG	TATTAGTCAT	CGCTATTACC	ATGGTGATGC	720
GGTTTTGGCA	GTACATCAAT	GGGCGTGGAT	AGCGGTTTGA	CTCACGGGGA	TTTCCAAGTC	780
TCCACCCCAT	TGACGTCAAT	GGGAGTTTGT	TTTGGCACCA	AAATCAACGG	GACTTTCCAA	840
AATGTCGTAA	CAACTCCGCC	CCATTGACGC	AAATGGGCGG	TAGGCGTGTA	CGGTGGGAGG	900
TTATATAAAG	CAGAGCTCTC	TGGCTAACTA	GAGAACCAC	TGCTTACTGG	CTTATCGAAA	960
TTAATACGAC	TCACTATAGG	GAGACCCAAG	CTTGGTACCA	ATTTAAATTG	ATATCTCCTT	1020
AGGTCTCGAG	TCTCTAGATA	ACCGGTCAAT	CGATTGGAAT	TCTTGCGGCC	GCTTGCTAGC	1080
CACCATGGAG	TTGTGGTTAA	GCTTGGTTCCT	TCCTTGTCCT	TGTTTTAAAA	GGTGTCCAGT	1140
GTGAAGTGAA	TCTGGTGGAG	TCTGGGGGAG	GCTTAGTGCA	GCCTGGAGGG	TCCCTGAAAG	1200
TCTCCTGTGT	AACCTCTGGA	TTCACTTTCA	GTGACTATTA	CATGTATTGG	GTTCGCCAGA	1260
CTCCAGAGAA	GAGGCTGGAG	TGGGTCGCAT	ACATTAGTCA	AGGTGGTGAT	ATAACCGACT	1320
ATCCAGACAC	TGTAAAGGGT	CGATTACCA	TCTCCAGAGA	CAATGCCAAG	AACACCCTGT	1380
ACCTGCAAAT	GAGCCGTCTG	AAGTCTGAGG	ACACAGCCAT	GTATTACTGT	GCAAGAGGCC	1440
TGGACGACGG	GGCCTGGTTT	GCTTACTGGG	GCCAAGGGAC	TCTGGTCACG	GTCTCTGTAG	1500
CTAGACCAA	GGGCCATCG	GTCTTCCCCC	TGGCACCCCT	CTCCAAGAGC	ACCTCTGGGG	1560
GCACAGCGGC	CCTGGGCTGC	CTGGTCAAGG	ACTACTTCCC	CGAACC GG TG	ACGGTGTCGT	1620
GGAACCTCAGG	CGCCCTGACC	AGCGGCGTGC	ACACCTTCCC	GGCTGTCCCTA	CAGTCCCTCAG	1680
GACTCTACTC	CCTCAGCAGC	GTGGTCACCG	TGCCCTCCAG	CAGCTTGGGC	ACCCAGACCT	1740
ACATCTGCAA	CGTGAATCAC	AAGCCCAGCA	ACACCAAGGT	GGACAAGAAA	GTTGGTGAGA	1800
GGCCAGCACA	GGGAGGGAGG	GTGCTGCTG	GAAGCCAGGC	TCAGCGCTCC	TGCCTGGACG	1860
CATCCCGGCT	ATGCAGCCCC	AGTCCAGGGC	AGCAAGGCAG	GCCCCGTCTG	CCTCTTCACC	1920
CGGAGGCCTC	TGCCCCCCCC	ACTCATGCTC	AGGGAGAGGG	TCTTCTGGCT	TTTTCCCCAG	1980
GCTCTGGGCA	GGCAGAGGCT	AGGTGCCCTT	AACCCAGGCC	CTGCACACAA	AGGGGCAGGT	2040
GCTGGGCTCA	GACCTGCCAA	GAGCCATATC	CGGGAGGACC	CTGCCCTGA	CCTAAGCCCA	2100
CCCCAAAGGC	CAAAGTCTCC	ACTCCCTCAG	CTCGGACACC	TTCTCTCCTC	CCAGATTCCA	2160
GTAACCTCCA	ATCTTCTCTC	TGCAGAGCCG	AAATCTTGTG	ACAAAACTCA	CACATGCCCA	2220
CCGTGCCCAG	GTAAGCCAGC	CCAGGCCCTC	CCCTCCAGCT	CAAGGCGGGA	CAGGTGCCCT	2280
TAGAGTAGCT	GCATCCAGGG	ACACAGCACG	TGGGTACCAA	CATGTCCGGA	GCCACATGGA	2340
CAGAGGCCGG	CTCGGCCAC	CCTCTGCCCT	GAGAGTGACC	GCTGTACCAA	CCTCTGTCCC	2400
TACAGGGCAG	CCCCGAGAAC	CACAGGTGTA	CACCCTGCCC	CCATCCCGGG	ATGAGCTGAC	2460
CAAGAACCAG	GTCAGCCTGA	CCTGCCTGGT	CAAAGGCTTC	TATCCAGCG	ACATCGCCGT	2520
GGAGTGGGAG	AGCAATGGGC	AGCCGGAGAA	CAACTACAAG	ACCACGCCCT	CCGTGCTGGA	2580
CTCCGACGGC	TCCTTCTTCC	TCTACAGCAA	GCTCACCCGT	GACAAGAGCA	GGTGGCAGCA	2640
GGGGAACGTC	TTCTCATGCT	CCGTGATGCA	TGAGGCTCTG	CACAACCACT	ACACGCAGAA	2700
GAGCCTCTCC	CTGTCTCCGG	GTAAATGAGT	GCGACGGCCG	GCAAGCCCCC	GCTCCCCGGG	2760
CTCTCGCGGT	CGCACGAGGA	TGCTTGGCAC	GTACCCCTTG	TACATACTTC	CCGGGCGCCC	2820
AGCATGGAAA	TAAAGCACCC	AGCGCTGCCC	TGGGCCCCCT	CGAGACTGTG	ATGGTTCTTT	2880
CCACGGGTCA	GGCCGAGTCT	GAGGCCTGAG	TGGCATGAGG	GAGGCAGAGC	GGGTCCCACT	2940
GTCCCCACAC	TGGCCCAGGC	TGTGCAGGTG	TGCCTGGGCC	CCCTAGGGTG	GGGCTCAGCC	3000
AGGGGCTGCC	CTCGGCAGGG	TGGGGGATTT	GCCAGCGTGG	CCCTCCCTCC	AGCAGCACCT	3060
GCCCTGGGCT	GGGCCACGGG	AAGCCCTAGG	AGCCCTGGG	GACAGACACA	CAGCCCTTGC	3120
CTCTGTAGGA	GACTGTCTCT	TTCTGTGAGC	GCCCCGTGTC	TCCCGACCTC	CATGCCCACT	3180
CGGGGGCATG	CCTAGTCCAT	GTGCGTAGGG	ACAGGCCCTC	CCTCACCCAT	CTACCCCCAC	3240
GGCACTAACC	CCTGGCTGCC	CTGCCCAGCC	TCGCACCCGC	ATGGGGACAC	AACCGACTCC	3300
GGGGACATGC	ACTCTCGGGC	CCTGTGGAGG	GACTGGTGCA	GATGCCACAC	CACACACTCA	3360
GCCCAGACCC	GTTCAACAAA	CCCCGCACTG	AGGTTGGCCG	GCCACACGGC	CACCACACAC	3420
ACACGTGCAC	GCCTCACACA	CGGAGCCTCA	CCCGGGCGAA	CTGCACAGCA	CCCAGACCAG	3480
AGCAAGGTCC	TCGCACACGT	GAACACTCCT	CGGACACAGG	CCCCACGAG	CCCCACGCGG	3540
CACCTCAAGG	CCCACGAGCC	TCTCGGCAGC	TTCTCCACAT	GCTGACCTGC	TCAGACAAAC	3600
CCAGCCCTCC	TCTCACAAGG	GTGCCCTTGC	AGCCGCCACA	CACACACAGG	GGATCACACA	3660
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CAGCCTCGAC	TGTGCCTTCT	AGTTGCCAGC	CATCTGTTGT	TTGCCCCCTC	CCCGTGCCCT	3780
CCTTGACCCCT	GGAAGGTGCC	ACTCCCACTG	TCCTTTCCCTA	ATAAAATGAG	GAAATTGCAT	3840
CGCATTGTCT	GAGTAGGTGT	CATTCTATTTC	TGGGGGGTGG	GGTGGGGCAG	GACAGCAAGG	3900

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TAAGCGCGGC	GGGTGTGGTG	GTTACGCGCA	GCGTGACCGC	TACACTTGCC	AGCGCCCTAG	4080
CGCCCGCTCC	TTTCGCTTTC	TTCCCTTCCT	TTCTCGCCAC	GTTTCGCCGG	CCTCTCAAAA	4140
AAGGGAAAAA	AAGCATGCAT	CTCAATTAGT	CAGCAACCAT	AGTCCCGCCC	CTAACTCCGC	4200
CCATCCCGCC	CCTAACTCCG	CCCAGTTCCG	CCCATTCTCC	GCCCCATGGC	TGACTAATTT	4260
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GAGGCTTTTT	TGGAGGCCTA	GGCTTTTGCA	AAAAGCTTGG	ACAGCTCAGG	GCTGCGATTT	4380
CGCGCCAAAC	TTGACGGCAA	TCCTAGCGTG	AAGGCTGGTA	GGATTTTATC	CCCGCTGCCA	4440
TCATGGTTTCG	ACCATTTGAA	TGCATCGTCG	CCGTGTCCCA	AAATATGGGG	ATTGGCAAAGA	4500
ACGGAGACCT	ACCCCTGGCCT	CCGCTCAGGA	ACGAGTTCAA	GTACTTCCAA	AGAATGACCA	4560
CAACCTCTTC	AGTGGAAGGT	AAACAGAATC	TGGTGATTAT	GGGTAGGAAA	ACCTGGTTCT	4620
CCATTCCCTGA	GAAGAAATCGA	CCTTTAAAGG	ACAGAAATTA	TATAGTTCTC	AGTAGAGAAC	4680
TCAAAGAACC	ACCACGAGGA	GCTCATTTTT	TTGCCAAAAG	TTTGGATGAT	GCCTTAAGAC	4740
TTATTGAACA	ACCGGAATTG	GCAAGTAAAG	TAGACATGGT	TTGGATAGTC	GGAGGCAGTT	4800
CTGTTTACCA	GGAAGCCATG	AATCAACCAG	GCCACCTTAG	ACTCTTTGTG	ACAAGGATCA	4860
TGCAGGAATT	TGAAAGTGAC	ACGTTTTTCC	CAGAAAATGA	TTTGGGGAAA	TATAAACTTC	4920
TCCCAGAATA	CCCAGGCGTC	CTCTCTGAGG	TCCAGGAGGA	AAAAGGCATC	AAGTATAAGT	4980
TTGAAGTCTA	CGAGAAGAAA	GACTAACAGG	AAGATGCTTT	CAAGTTCTCT	GCTCCCCCTC	5040
TAAAGCTATG	CATTTTTTATA	AGACCATGGG	ACTTTTGCTG	GCTTTAGATC	TCTTTGTGAA	5100
GGAACCTTAC	TTCTGTGGTG	TGACATAATT	GGACAAACTA	CCTACAGAGA	TTTAAAGCTC	5160
TAAGGTAAAT	ATAAAATTTT	TAAGTGATTA	ATGTGTTAAA	CTACTGATTG	TAATTGTTTG	5220
TGTATTTTAG	ATTCCAACCT	ATGGAACCTGA	TGAATGGGAG	CAGTGGTGGA	ATGCCTTTAA	5280
TGAGGAAAAC	CTGTTTTGCT	CAGAAGAAAT	GCCATCTAGT	GATGATGAGG	CTACTGCTGA	5340
CTCTCAACAT	TCTACTCCTC	CAAAAAAGAA	GAGAAAAGTA	GAAGACCCCA	AGGACTTTCC	5400
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TGCTATTTTAC	ACCACAAAGG	AAAAAGCTGC	ACTGCTATAC	AAGAAAATTA	TGGAAAAATA	5520
TTCTGTAAACC	TTTATAAGTA	GGCATAACAG	TTATAATCAT	AACATACTGT	TTTTTCTTAC	5580
TCCACACAGG	CATAGAGTGT	CTGCTATTAA	TAACTATGCT	CAAAAAATGT	GTACCTTTAG	5640
CTTTTAAATT	TGTAAAGGGG	TTAATAAGGA	ATATTTGATG	TATAGTGCCCT	TGACTAGAGA	5700
TGATAATCAG	CCATAACCACA	TTTGTAGAGG	TTTTACTTGC	TTTAAAAAAC	CTCCACACCC	5760
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CACTGCATTC	TAGTTGTGGT	TTGTCCAAAC	TCATCAATGT	ATCTTATCAT	GTCTGGATCG	5940
GCTGGATGAT	CCTCCAGCGC	GGGGATCTCA	TGCTGGAGTT	CTTCGCCCAC	CCCAACTTGT	6000
TTATTGCAGC	TTATAATGGT	TACAAATAAA	GCAATAGCAT	CACAAATTTT	ACAAATAAAG	6060
CATTTTTTTC	ACTGCAATCT	AGTTGTGGTT	TGTCCAAACT	CATCAATGTA	TCTTATCATG	6120
TCTGTATACC	GTCGACCTCT	AGCTAGAGCT	TGGCGTAATC	ATGGTCATAG	CTGTTTCTCT	6180
TGTGAAATTG	TTATCCGCTC	ACAATTCAC	ACAACATACG	AGCCGGGAAG	ATAAAGTGTA	6240
AAGCCTGGGG	TGCCAATGA	GTGAGCTAAC	TCACATTAAT	TGCGTTGCGC	TCACTGCCCG	6300
CTTTCCAGTC	GGGAAACCTG	TCGTGCCAGC	TGCATTAAAT	AATCGGCCAA	CGCGCGGGGA	6360
GAGGCGGTTT	GCGTATTGGG	CGCTCTTCCG	CTTCCTCGCT	CACTGACTCG	CTGCGCTCGG	6420
TCGTTCCGGCT	GCGGCGAGCG	GTATCAGCTC	ACTCAAAGGC	GGTAATACGG	TTATCCACAG	6480
AATCAGGGGA	TAACGCAGGA	AAGAACATGT	GAGCAAAAGG	CCAGCAAAAG	GCCAGGAACC	6540
GTAAAAAGGC	CGCGTTGCTG	GCGTTTTTCC	ATAGGCTCCG	CCCCCTGAC	GAGCATCACA	6600
AAAAATCGACG	CTCAAGTCAG	AGGTGGCGAA	ACCCGACAGG	ACTATAAAGA	TACCAGGCGT	6660
TTCCCCCTGG	AAGCTCCCTC	GTGCGCTCTC	CTGTTCCGAC	CCTGCCGCTT	ACCGGATACC	6720
TGTCCGCTTT	TCTCCCTTCG	GGAAGCGTGG	CGCTTTCTCA	ATGCTCACGC	TGTAGGTATC	6780
TCAGTTCCGGT	GTAGGTCGTT	CGCTCCAAGC	TGGGCTGTGT	GCACGAACCC	CCCGTTCAGC	6840
CCGACCGCTG	CGCCTTATCC	GGTAACTATC	GTCTTGAGTC	CAACCCGGTA	AGACACGACT	6900
TATCGCCACT	GGCAGCAGCC	ACTGGTAACA	GGATTAGCAG	AGCGAGGTAT	GTAGGCGGTG	6960
CTACAGAGTT	CTTGAAGTGG	TGGCCTAACT	ACGGCTACAC	TAGAAGGACA	GTATTTGGTA	7020
TCTGCGCTCT	GCTGAAGCCA	GTTACCTTCG	GAAAAAGAGT	TGGTAGCTCT	TGATCCGGCA	7080
AACAAACCAC	CGCTGGTAGC	GGTGGTTTTT	TTGTTTGCAA	GCAGCAGATT	ACGCGCAGAA	7140
AAAAAGGATC	TCAAGAAGAT	CCTTTGATCT	TTTCTACGGG	GTCTGACGCT	CAGTGGAACG	7200
AAAATCACG	TTAAGGGATT	TTGGTCATGA	GATTATCAAA	AAGGATCTTC	ACCTAGATCC	7260
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CCATAGTTGC	CTGACTCCCC	GTCGTGTAGA	TAACTACGAT	ACGGGAGGGC	TTACCATCTG	7440
GCCCCAGTGC	TGCAATGATA	CCGCGAGACC	CACGCTCACC	GGCTCCAGAT	TTATCAGCAA	7500
TAAACCAGCC	AGCCGGAAGG	GCCGAGCGCA	GAAGTGGTCC	TGCAACTTTA	TCCGCCTCCA	7560
TCCAGTCTAT	TAATTGTTGC	CGGGAAGCTA	GAGTAAGTAG	TTCGCCAGTT	AATAGTTTGC	7620
GCAACGTTGT	TGCCATTGCT	ACAGGCATCG	TGGTGTACAG	CTCGTCGTTT	GGTATGGCTT	7680
CATTCAGCTC	CGGTTCCCAA	CGATCAAGGC	GAGTTACATG	ATCCCCCATG	TTGTGCAAAA	7740
AAGCGGTTAG	CTCCTTCGGT	CCTCCGATCG	TTGTCAGAAG	TAAGTTGGCC	GCAGTGTTAT	7800
CACCTCATGGT	TATGGCAGCA	CTGCATAATT	CTCTTACTGT	CATGCCATCC	GTAAGATGCT	7860
TTTCTGTGAC	TGGTGAGTAC	TCAACCAAGT	CATTCTGAGA	ATAGTGTATG	CGGCGACCGA	7920
GTTGCTCTTG	CCCGGCGTCA	ATACGGGATA	ATACCGCGCC	ACATAGCAGA	ACTTTAAAAAG	7980
TGCTCATCAT	TGGAAAAAGT	TCTTCGGGGC	GAAAACTCTC	AAGGATCTTA	CCGCTGTTGA	8040
GATCCAGTTC	GATGTAACCC	ACTCGTGCAC	CCAACTGATC	TTCAGCATCT	TTTACTTTCA	8100
CCAGCGTTTC	TGGGTGAGCA	AAAACAGGAA	GGCAAAATGC	CGCAAAAAAG	GGAATAAGGG	8160
CGACACGGAA	ATGTTGAATA	CTCATACTCT	TCCTTTTTTCA	ATATTATTGA	AGCATTTATC	8220
AGGGTTATTG	TCTCATGAGC	GGATACATAT	TTGAATGTAT	TTAGAAAAAT	AAACAAATAG	8280
GGGTTCCGCG	CACATTTCCT	CGAAAAGTGC	CACCTGACGT	C		8321

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8897 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GGTACCAATT	TAAATTGATA	TCTCCTTAGG	TCTCGAGCAC	CATGAAGTTG	CCTGTTAGGC	60
TGTTGGTGCT	GATGTTCTGG	ATTCTTGCTT	CCAGCAGTGA	TGTTTTGATG	ACCCAAATTC	120
CAGTCTCCCT	GCCTGTCAGT	CTTGAGATC	AAGCGTCCAT	CTCTTGAGCA	TCTAGTCAGA	180
TCATTGTACA	TAATAATGGC	AACACCTATT	TAGAATGGTA	CCTGCAGAAA	CCAGGCCAGT	240
CTCCACAGCT	CCTGATCTAC	AAAGTTTCCA	ACCGATTTTC	TGGGGTCCCA	GACAGGTTCA	300
GCGGCAGTGG	ATCAGGGACA	GATTTACAC	TCAAGATCAG	CAGAGTGGAG	GCTGAGGATC	360
TGGGAGTTTA	TTACTGCTTT	CAAGGTTTAC	ATGTTCCATT	CACGTTTCGGC	TGGGGGACAA	420
AGTTGGAAAT	AAAACGTAAG	TCTCGAGTCT	CTAGATAACC	GGTCAATCGA	TTGGAATTCT	480
AAACTCTGAG	GGGGTCGGAT	GACGTGGCCA	TTCTTTGCCT	AAAGCATTGA	GTTTACTGCA	540
AGGTCAGAAA	AGCATGCAAA	GCCCTCAGAA	TGGCTGCAAA	GAGCTCCAAC	AAAACAATTT	600
AGAACTTTAT	TAAGGAATAG	GGGGAAGCTA	GGAAGAAACT	CAAAACATCA	AGATTTTAAA	660
TACGCTTCTT	GGTCTCCTTG	CTATAATTAT	CTGGGATAAG	CATGCTGTTT	TCTGTCTGTC	720
CCTAACATGC	CCTTATCCGC	AAACAACACA	CCCAAGGGCA	GAACCTTGTT	ACTTAAACAC	780
CATCTGTTT	GCTTCTTTCC	TCAGGAAGT	TGGCTGCACC	ATCTGTCTTC	ATCTTCCCGC	840
CATCTGATGA	GCAGTTGAAA	TCTGGAAGT	CCTCTGTTGT	GTGCCTGCTG	AATAACTTCT	900
ATCCCAGAGA	GGCCAAAGTA	CAGTGAAGG	TGGATAACGC	CCTCCAATCG	GGTAACTCCC	960
AGGAGAGTGT	CACAGAGCAG	GAGAGCAAGG	ACAGCACCTA	CAGCCTCAGC	AGCACCTTGA	1020
CGCTGAGCAA	AGCAGACTAC	GAGAAAACACA	AAGTCTACGC	CTGCGAAGTC	ACCCATCAGG	1080
GCCTGAGCTC	GCCCCGTCACA	AAGAGCTTCA	ACAGGGGAGA	GTGTTAGAGG	GAGAAAGTCC	1140
CCCACCTGCT	CCTCAGTTCC	AGCCTGACCC	CCTCCCATCC	TTTGGCCTCT	GACCCCTTTT	1200
CCACAGGGGA	CCTACCCCTA	TTGCGGTCCT	CCAGCTCATC	TTTCACCTCA	CCCCCTCCT	1260
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CACCTGTGGT	TTCTCTCTTT	CCTCATTTAA	TAATTATTAT	CTGTTGTTTT	ACCAACTACT	1380
CAATTCTCT	TATAAGGGAC	TAAATATGTA	GTCATCCTAA	GGCACGTAAC	CATTTATAAA	1440
AATCATCCTT	CATTCTATTT	TACCCTATCA	TCCTCTGCAA	GACAGTCCTC	CCTCAAACCC	1500
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TCCCCTCCTC	AGCAAGCCCT	CATAGTCCTT	TTTAAGGGTG	ACAGGTCTTA	CAGTCATATA	1620

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GAGTACTTTC	CACAACCTAA	TTTAATCCAC	ACTATACTGT	GAGATTAAAA	ACATTTCATTA	1920
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ACTTCTAGAT	GACTGAGTGT	CCCCACCCAC	CAAAAACTA	TGCAAGAATG	TTCAAAGCAG	2040
CTTTATTTAC	AAAAGCCAAA	AATTGGAAAT	AGCCCGATTG	TCCAACAATA	GAATGAGTTA	2100
TTAAACTGTG	GTATGTTTAT	ACATTAGAAT	ACCCAATGAG	GAGAATTAAAC	AAGCTACAAC	2160
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CATCTGTGCC	CTGTTTGGCT	AGCTAGGAGC	ACACATACAT	AGAAATTAAA	TGAAACAGAC	2700
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GGGAAAAAAA	GCATGCATCT	CAATTAGTCA	GCAACCATAG	TCCCGCCCCCT	AACTCCGCCC	3780
ATCCCGCCCC	TAACTCCGCC	CAGTTCCGCC	CATTTCTCCG	CCCATGGCTG	ACTAATTTTTT	3840
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GGCTTTTTTTG	GAGGCCTAGG	CTTTTGCAAA	AAGCTTGGAC	AGCTCAGGGC	TGCGATTTTCG	3960
CGCCAAACTT	GACGGCAATC	CTAGCGTGAA	GGCTGGTAGG	ATTTTATCCC	CGCTGCCATC	4020
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ATTGAACAAC	CGGAATTGGC	AAGTAAAGTA	GACATGGTTT	GGATAGTCGG	AGGCAGTTCT	4380
GTTTACCAGG	AAGCCATGAA	TCAACCAGGC	CACCTTAGAC	TCTTTGTGAC	AAGGATCATG	4440
CAGGAATTTG	AAAGTGACAC	GTTTTTCCCA	GAAATTGATT	TGGGGAAATA	TAAACTTCTC	4500
CCAGAATACC	CAGGCGTCCT	CTCTGAGGTC	CAGGAGGAAA	AAGGCATCAA	GTATAAGTTT	4560
GAAGTCTACG	AGAAGAAAGA	CTAACAGGAA	GATGCTTTCA	AGTTCTCTGC	TCCCCCTCTA	4620
AAGCTATGCA	TTTTTATAAG	ACCATGGGAC	TTTTGCTGGC	TTTAGATCTC	TTTGTGAAGG	4680
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CTCAACATTC	TACTCCTCCA	AAAAAGAAGA	GAAAGGTAGA	AGACCCCAAG	GACTTTTCTT	4980
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CTATTTACAC	CACAAAGGAA	AAAGCTGCAC	TGCTATACAA	GAAAATTATG	GAAAAATATT	5100
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CACACAGGCA	TAGAGTGTCT	GCTATTAATA	ACTATGCTCA	AAAATTGTGT	ACCTTTAGCT	5220
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ATAATCAGCC	ATACCACATT	TGTAGAGGTT	TTACTTGCTT	TAAAAAACCT	CCCACACCTC	5340
CCCCTGAACC	TGAAACATAA	AATGAATGCA	ATTGTTGTTG	TAACTTGT	TATTGCAGCT	5400
TATAATGGTT	ACAAATAAAG	CAATAGCATC	ACAAATTTCA	CAAATAAAGC	ATTTTTTTTCA	5460
CTGCATTCTA	GTTGTGGTTT	GTCCAAACTC	ATCAATGTAT	CTTATCATGT	CTGGATCGGC	5520
TGGATGATCC	TCCAGCGCGG	GGATCTCATG	CTGGAGTTCT	TCGCCCACCC	CAACTTGT	5580
ATTGCAGCTT	ATAATGGTTA	CAAATAAAGC	AATAGCATCA	CAAATTTTCAC	AAATAAAGCA	5640
TTTTTTTTTCA	TGCATTCTAG	TTGTGGTTTG	TCCAAACTCA	TCAATGTATC	TTATCATGTC	5700
TGTATACCGT	CGACCTCTAG	CTAGAGCTTG	GCGTAATCAT	GGTCATAGCT	GTTTCCTGTG	5760
TGAAATTGTT	ATCCGCTCAC	AATTCACAC	AACATACGAG	CCGGAAGCAT	AAAGTGTA	5820
GCCTGGGGTG	CCTAATGAGT	GAGCTAACTC	ACATTAATTG	CGTTGCGCTC	ACTGCCCCGT	5880
TTCCAGTCGG	GAAACCTGTC	GTGCCAGCTG	CATTAATGAA	TCGGCCAACG	CGCGGGGAGA	5940
GGCGGTTTGC	GTATTGGGCG	CTCTTCCGCT	TCCTCGCTCA	CTGACTCGCT	GCGCTCGGTC	6000
GTTCCGGCTGC	GGCGAGCGGT	ATCAGCTCAC	TCAAAGGCGG	TAATACGGTT	ATCCACAGAA	6060
TCAGGGGATA	ACGCAGGAAA	GAACATGTGA	GCAAAAGGCC	AGCAAAAGGC	CAGGAACCGT	6120
AAAAAGGCCG	CGTTGTGCGG	GTTTTTCCAT	AGGCTCCGCC	CCCCTGACGA	GCATCACAAA	6180
AATCGACGCT	CAAGTCAGAG	GTGGCGAAAC	CCGACAGGAC	TATAAAGATA	CCAGGCGTTT	6240
CCCCCTGGAA	GCTCCCTCGT	GCGCTCTCCT	GTTCCGACCC	TGCCGCTTAC	CGGATACCTG	6300
TCCGCCTTTC	TCCCTTCGGG	AAGCGTGGCG	CTTCTCAAT	GCTCACGCTG	TAGGTATCTC	6360
AGTTCGGTGT	AGGTCGTTTC	CTCCAAGCTG	GGCTGTGTGC	ACGAACCCCC	CGTTCAGCCC	6420
GACCGCTGCG	CCTTATCCGG	TAACATATCGT	CTTGAGTCCA	ACCCGGTAAG	ACACGACTTA	6480
TCGCCACTGG	CAGCAGCCAC	TGGTAACAGG	ATTAGCAGAG	CGAGGTATGT	AGGCGGTGCT	6540
ACAGACTTCT	TGAAGTGGTG	GCCTAACTAC	GGCTACACTA	GAAGGACAGT	ATTTGGTATC	6600
TGCGCTCTGC	TGAAGCCAGT	TACCTTCGGA	AAAAGAGTTG	GTAGCTCTTG	ATCCGGCAAA	6660
CAAACCACCG	CTGGTAGCGG	TGGTTTTTTT	GTTTGCAAGC	AGCAGATTAC	GCGCAGAAAA	6720
AAAGGATCTE	AAGAAGATCC	TTTGATCTTT	TGTACGGGGT	CTGACGCTCA	GTGGAAAGAA	6780
AACTCACGTT	AAGGGATTTT	GGTCATGAGA	TTATCAAAAA	GGATCTTCAC	CTAGATCCTT	6840
TTAAATTA	AATGAAGTTT	TAAATCAATC	TAAAGTATAT	ATGAGTAAAC	TTGGTCTGAC	6900
AGTTACCAAT	GCTTAATCAG	TGAGGCACCT	ATCTCAGCGA	TCTGTCTATT	TCGTTTCATCC	6960
ATAGTTGCTT	GACTCCCCGT	CGTGTAGATA	ACTACGATAC	GGGAGGGCTT	ACCATCTGGC	7020
CCCAGTGCTG	CAATGATACC	GCGAGACCCA	CGCTCACC	CTCCAGATTT	ATCAGCAATA	7080
AACCAGCCAG	CCGGAAGGGC	CGAGCGCAGA	AGTGGTCCCTG	CAACTTTATC	CGCCTCCATC	7140
CAGTCTATTA	ATTGTTGCCG	GGAAGCTAGA	GTAAGTAGTT	CGCCAGTTAA	TAGTTTGCGC	7200
AACGTTGTTG	CCATTGCTAC	AGGCATCGTG	GTGTCACGCT	CGTCGTTTGG	TATGGCTTCA	7260
TTTACGCTCCG	GTTCCCAACG	ATCAAGGCGA	GTTACATGAT	CCCCCATGTT	GTGCAAAAAA	7320
GCGGTTAGCT	CCTTCGGTCC	TCCGATCGTT	GTCAGAAAGTA	AGTTGGCCGC	AGTGTTATCA	7380
CTCATGGTTA	TGGCAGCACT	GCATAATTCT	CTTACTGTCA	TGCCATCCGT	AAGATGCTTT	7440
TCTGTGACTG	GTGAGTACTC	AACCAAGTCA	TTCTGAGAAT	AGTGTATGCG	GCGACCGAGT	7500
TGCTCTTGCC	CGGCGTCAAT	ACGGGATAAT	ACCGCGCCAC	ATAGCAGAAC	TTTAAAAGTG	7560
CTCATCATTTG	GAAAACGTTT	TTCCGGGGCGA	AAACTCTCAA	GGATCTTACC	GCTGTTGAGA	7620
TCCAGTTTCGA	TGTAACCCAC	TCGTGCACCC	AACATGATCTT	CAGCATCTTT	TACTTTTACC	7680
AGCGTTTCTG	GGTGAGCAAA	AACAGGAAGG	CAAAATGCCG	CAAAAAAGGG	AATAAGGGCG	7740
ACACGGAAAT	GTTGAATACT	CATACTCTTC	CTTTTTCAAT	ATTATTGAAG	CATTTATCAG	7800
GGTTATTGTC	TCATGAGCGG	ATACATATTT	GAATGTATTT	AGAAAAATAA	ACAAATAGGG	7860
GTTCCGCGCA	CATTTCCCCG	AAAAGTGCCA	CCTGACGTCG	ACGGATCGGG	AGATCTGCTA	7920
GCCCCGGTGA	CCTGAGGCGC	GCCGGCTTCG	AATAGCCAGA	GTAACCTTTT	TTTTTAATTT	7980
TATTTTATTT	TATTTTGTAG	ATGGAGTTTG	GCGCCGATCT	CCCATCCCC	TATGGTTCGAC	8040
TCTCAGTACA	ATCTGCTCTG	ATGCCGCATA	GTTAAGCCAG	TATCTGCTCC	CTGCTTGTGT	8100
GTTGGAGGTC	GCTGAGTAGT	GCGCGAGCAA	AATTTAAGCT	ACAACAAGGC	AAGGCTTGAC	8160
CGACAATTGC	ATGAAGAATC	TGCTTAGGGT	TAGGCGTTTT	GCGCTGCTTC	GCGATGTACG	8220
GGCCAGATAT	ACGCGTTGAC	ATTGATTATT	GACTAGTTAT	TAATAGTAAT	CAATTACGGG	8280
GTCATTAGTT	CATAGCCCAT	ATATGGAGTT	CCGCGTTTACA	TAACTTACGG	TAAATGGCCC	8340
GCCTGGCTGA	CCGCCCAACG	ACCCCCGCC	ATTGACGTCA	ATAATGACGT	ATGTTCCCAT	8400
AGTAACGCCA	ATAGGGACTT	TCCATTGACG	TCAATGGGTG	GACTATTTAC	GGTAAACTGC	8460

CCACTTGGCA	GTACATCAAG	TGTATCATAT	GCCAAGTACG	CCCCCTATTG	ACGTCAATGA	8520
CGGTAAATGG	CCCGCCTGGC	ATTATGCCCC	GTACATGACC	TTATGGGACT	TTCTTACTTG	8580
GCAGTACATC	TACGTATTAG	TCATCGCTAT	TACCATGGTG	ATGCGGTTTT	GGCAGTACAT	8640
CAATGGGCGT	GGATAGCGGT	TTGACTCACG	GGGATTTCCA	AGTCTCCACC	CCATTGACGT	8700
CAATGGGAGT	TTGTTTTGGC	ACCAAAATCA	ACGGGACTTT	CCAAAATGTC	GTAACAACTC	8760
CGCCCCATTG	ACGCAAATGG	GCGGTAGGCG	TGTACGGTGG	GAGGTCTATA	TAAGCAGAGC	8820
TCTCTGGCTA	ACTAGAGAAC	CCACTGCTTA	CTGGCTTATC	GAAATTAATA	CGACTCACTA	8880
TAGGGAGACC	CAAGCTT					8897

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8321 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

GGTACCAATT	TAAATTGATA	TCTCCTTAGG	TCTCGAGTCT	CTAGATAACC	GGTCAATCGA	60
TTGGAATTCT	TGCGGCCGCT	TGCTAGCCAC	CATGGAGTTG	TGGTTAAGCT	TGGTCTTCCT	120
TGTCTTTGTT	TTAAAGGTG	TCCAGTGTGA	AGTGCAACTG	GTGGAGTCTG	GGGGAGGCTT	180
AGTGCAGCCT	GGAGGGTCCC	TGCGACTTTC	CTGTGCTGCA	TCTGGATTCC	CGTTCAGTGA	240
CTATTACATG	TATTGGGTTC	GCCAGGCTCC	AGGCAAGGGA	CTGGAGTGGG	TCTCATACAT	300
TAGTCAAGAT	GGTGATATA	CCGACTATGC	AGACTCCGTA	AAGGGTCGAT	TCACCATCTC	360
CAGAGACAAT	GCAAAGAACA	GCCTGTACCT	GCAAAATGAAC	AGCCTGAGGG	ACGAGGACAC	420
AGCCGTGTAT	TACTGTGCAA	GAGGCCTGGC	GGACGGGGGC	TGGTTTGCTT	ACTGGGGGCCA	480
AGGGACTCTG	GTCACGGTCT	CTTCCGCTAG	CACCAAGGGC	CCATCGGTCT	TCCCCCTGGC	540
ACCTCTCTCC	AAGAGCACCT	CTGGGGGCAC	AGCGGCCCTG	GGCTGGCTGG	TCAAGGACTA	600
CTTCCCCGAA	CCGGTGACGG	TGTCGTGGAA	CTCAGGCGCC	CTGACCAGCG	GCGTGCACAC	660
CTTCCCGGCT	GTCCTACAGT	CCTCAGGACT	CTACTCCCTC	AGCAGCGTGG	TCACCGTGCC	720
CTCCAGCAGC	TTGGGCACCC	AGACCTACAT	CTGCAACGTG	AATCACAAGC	CCAGCAACAC	780
CAAGGTGGAC	AAGAAAGTTG	GTGAGAGGCC	AGCACAGGGA	GGGAGGGTGT	CTGCTGGAAG	840
CCAGGCTCAG	CGCTCTTGCC	TGGACGCATC	CCGGCTATGC	AGCCCCAGTC	CAGGGCAGCA	900
AGGCAGGCCC	CGTCTGCCTC	TTACCCCGGA	GGCCTCTGCC	CGCCCCACTC	ATGCTCAGGG	960
AGAGGGTCTT	CTGGCTTTTT	CCCCAGGCTC	TGGGCAGGCA	CAGGCTAGGT	GCCCCTAACC	1020
CAGGCCCTGC	ACACAAAGGG	GCAGGTGCTG	GGCTCAGACC	TGCCAAGAGC	CATATCCGGG	1080
AGGACCCTGC	CCCTGACCTA	AGCCCCACCC	AAAGGCCAAA	CTCTCCACTC	CCTCAGCTCG	1140
GACACCTTCT	CTCCTCCCAG	ATTCCAGTAA	CTCCCAATCT	TCTCTCTGCA	GAGCCCCAAT	1200
CTTGTGACAA	AACTCACACA	TGCCACCCGT	GCCCAGGTAA	GCCAGCCCAG	GCCTCGCCCT	1260
CCAGCTCAAG	GCGGGACAGG	TGCCCTAGAG	TAGCCTGCAT	CCAGGGACAC	ACCACGTGGG	1320
TACCAACATG	TCCGGAGCCA	CATGGACAGA	GGCCGGCTCG	GCCCACCCTC	TGCCCTGAGA	1380
GTGACCGCTG	TACCAACCTC	TGTCCCTACA	GGCAGCCCCC	GAGAACCACA	GGTGTAACAC	1440
CTGCCCCCAT	CCCGGGATGA	GCTGACCAAG	AACCAGGTCA	GCCTGACCTG	CCTGGTCAAA	1500
GGCTTCTATC	CCAGCGACAT	CGCCGTGGAG	TGGGAGAGCA	ATGGGCAGCC	GGAGAACAAC	1560
TACAAGACCA	CGCCTCCCGT	GCTGGACTCC	GACGGCTCCT	TCTTCTCTTA	CAGCAAGCTC	1620
ACCGTGGACA	AGAGCAGGTG	GCAGCAGGGG	AACGTCTTCT	CATGCTCCGT	GATGCATGAG	1680
GCTCTGCACA	ACCACTACAC	GCAGAAGAGC	CTCTCCCTGT	CTCCGGGTAA	ATGAGTGCGA	1740
CGGCCGGCAA	GCCCCCGCTC	CCCGGGCTCT	CGCGGTCGCA	CGAGGATGCT	TGGCACGTAC	1800
CCCCTGTACA	TACTTCCCGG	GCGCCCAGCA	TGGAAATAAA	GCACCCAGCG	CTGCCCTGGG	1860
CCCCTGCGAG	ACTGTGATGG	TTCTTTCCAC	GGGTCAGGCC	GAGTCTGAGG	CCTGAGTGGC	1920
ATGAGGGAGG	CAGAGCGGGT	CCCACTGTCC	CCCACTGGC	CCAGGCTGTG	CAGGTGTGCC	1980
TGGGCCCCCT	AGGGTGGGGC	TCAGCCAGGG	GCTGCCCTCG	GCAGGGTGGG	GGATTTGCCA	2040
GCGTGGCCCT	CCCTCCAGCA	GCACCTGCCC	TGGGCTGGGC	CACGGGAAGC	CCTAGGAGCC	2100
CCTGGGGACA	GACACACAGC	CCCTGCCTCT	GTAGGAGACT	GTCCCTGTTCT	GTGAGCGCCC	2160

CTGTCTCTCCC	GACCTCCATG	CCCACCTCGGG	GGCATGCCTA	GTCCATGTGC	GTAGGGACAG	2220
GCCCTCCCTC	ACCCATCTAC	CCCCACGGCA	CTAACCCCTG	GCTGCCCTGC	CCAGCCTCGC	2280
ACCCGCATGG	GGACACAACC	GACTCCGGGG	ACATGCACCT	TCGGGGCCCTG	TGGAGGGACT	2340
GGTGCAGATG	CCCACACACA	CACCTCAGCCC	AGACCCGTTC	AACAAACCCC	GCACTGAGGT	2400
TGGCCGGCCA	CACGGCCACC	ACACACACAC	GTGCACGCCT	CACACACGGA	GCCTCACCCG	2460
GGCGAACTGC	ACAGCACCCA	GACCAGAGCA	AGGTCCTCGC	ACACGTGAAC	ACTCCTCGGA	2520
CACAGGCCCC	CACGAGCCCC	ACGCGGCACC	TCAAGGCCCA	CGAGCCTCTC	GGCAGCTTCT	2580
CCACATGCTG	ACCTGCTCAG	ACAAACCCAG	CCCTCCTCTC	ACAAGGGTGC	CCCTGCAGCC	2640
GCCACACACA	CACAGGGGAT	CACACACCAC	GTCACGTCCC	TGGCCCTGGC	CCACTTCCCA	2700
GTGCCGCCCT	TCCCTGCAGG	ACGGATCAGC	CTCGACTGTG	CCTTCTAGTT	GCCAGCCATC	2760
TGTTGTTTGC	CCCTCCCCCG	TGCCCTCCCTT	GACCCCTGGAA	GGTGCCACTC	CCACTGTCTT	2820
TTCCCTAATAA	AATGAGGAAA	TTGCATCGCA	TTGTCTGAGT	AGGTGTCATT	CTATTCTGGG	2880
GGGTGGGGTG	GGGCAGGACA	GCAAGGGGGA	GGATTGGGAA	GACAATAGCA	GGCATGCTGG	2940
GGATGCGGTG	GGCTCTATGG	CTTCTGAGGC	GGAAAGAACC	AGCTGGGGCT	CTAGGGGGTA	3000
TCCCCACGCG	CCCTGTAGCG	GCGCATTAAG	CGCGGCGGGT	GTGGTGGTTA	CGCGCAGCGT	3060
GACCGCTACA	CTTGCCAGCG	CCCTAGCGCC	CGCTCCTTTC	GCTTCTTCTC	CTTCCCTTCT	3120
CGCCACGTTT	GCCGGGCTTC	TCAAAAAAGG	GAAAAAAAGC	ATGCATCTCA	ATTAGTCAGC	3180
AACCATAGTC	CCGCCCCATA	CTCCGCCCAT	CCCGCCCCCTA	ACTCCGCCCA	GTTCCGCCCA	3240
TTCTCCGCCC	CATGGCTGAC	TAATTTTTTTT	TATTTATGCA	GAGGCCGAGG	CCGCCTCGGC	3300
CTCTGAGCTA	TTCCAGAAGT	AGTGAGGAGG	CTTTTTTTGGA	GGCCTAGGCT	TTTGCAAAAA	3360
GCTTGACAG	CTCAGGGCTG	CGATTTCGCG	CCAACTTTGA	CGGCAATCCT	AGCGTGAAGG	3420
CTGGTAGGAT	TTTATCCCCG	CTGCCATCAT	GGTTCGACCA	TTGAACTGCA	TCGTCGCCGT	3480
GTCCCAAAAT	ATGGGGATTG	GCAAGAACGG	AGACCTACCC	TGGCCTCCGC	TCAGGAACGA	3540
GTTCAAGTAC	TTCCAAAGAA	TGACCACAAC	CTCTTCAGTG	GAAGGTAAAC	AGAATCTGGT	3600
GATTATGGGT	AGGAAAACCT	GGTCTCCAT	TCCTGAGAAG	AATCGACCTT	TAAAGGACAG	3660
AATTAATATA	GTTCTCAGTA	GAGAACTCAA	AGAACCACCA	CGAGGAGCTC	ATTTTCTTGC	3720
CAAAAGTTTG	GATGATGCCT	TAAGACTTAT	TGAACAACCG	GAAATGGCAA	GTAAAGTAGA	3780
CATGGTTTGG	ATAGTCGGAG	GCAGTTCCTGT	TTACCAGGAA	GCCATGAAATC	AACCAGGCCA	3840
CCTTACTGCTC	TTTGTGACAA	GGATCATGCA	GGAATTTGAA	AGTGAGACGT	TTTTTCCCAGA	3900
AATTGATTTG	GGGAAATATA	AACTTCTCCC	AGAATACCCA	GGCGTCCCTCT	CTGAGGTCCA	3960
GGAGGAAAAA	GGCATCAAGT	ATAAGTTTGA	AGTCTACGAG	AAGAAAGACT	AACAGGAAGA	4020
TGCTTTCAAG	TTCTCTGCTC	CCCTCCTAAA	GCTATGCATT	TTTATAAGAC	CATGGGACTT	4080
TTGCTGGCTT	TAGATCTCTT	TGTGAAGGAA	CCTTACTTCT	GTGGTGTGAC	ATAATTGGAC	4140
AAACTACCTA	CAGAGATTTA	AAGCTCTAAG	GTAAATATAA	AATTTTAAAG	TGTATAATGT	4200
GTTAAACTAC	TGATTCTAAT	TGTTTGTGTA	TTTTTAGATTC	CAACCTATGG	AACTGATGAA	4260
TGGGAGCAGT	GGTGAATGC	CTTTAATGAG	GAAAACCTGT	TTTGCTCAGA	AGAAATGCCA	4320
TCTAGTGATG	ATGAGGCTAC	TGCTGACTCT	CAACATTCCTA	CTCCTCCAAA	AAAGAAGAGA	4380
AAGGTAGAAG	ACCCCAAGGA	CTTTCCTTCA	GAATTGCTAA	GTTTTTTGAG	TCATGCTGTG	4440
TTAGTAATA	GAACCTTTCG	TTGCTTTGCT	ATTTACACCA	CAAAGGAAAA	AGCTGCACTG	4500
CTATACAAGA	AAATTATGGA	AAAAATATCT	GTAACCTTTA	TAAGTAGGCA	TAACAGTTAT	4560
AATCATAACA	TACTGTTTTT	TCTTACTCCA	CACAGGCATA	GAGTGTCTGC	TATTAATAAC	4620
TATGCTCAAA	AATTGTGTAC	CTTTAGCTTT	TTAATTTGTA	AAGGGGTAA	TAAGGAATAT	4680
TTGATGTATA	GTGCCTTGAC	TAGAGATCAT	AATCAGCCAT	ACCACATTTG	TAGAGGTTTT	4740
ACTTGCTTTA	AAAAACCTCC	CACACCTCCC	CCTGAACCTG	AAACATAAAA	TGAATGCAAT	4800
TGTTGTTGTT	AACCTGTTTA	TTGCAGCTTA	TAATGGTTAC	AAATAAAGCA	ATAGCATCAC	4860
AAATTTTACA	AATAAAGCAT	TTTTTTTCACT	GCAATTCAGT	TGTGGTTTGT	CCAAACTCAT	4920
CAATGTATCT	TATCATGTCT	GGATCGGGTG	GATGATCCTC	CAGCGCGGGG	ATCTCATGCT	4980
GGAGTTCTTC	GCCCACCCCA	ACTTGTTTAT	TGCAGCTTAT	AATGGTTACA	AATAAAGCAA	5040
TAGCATCACA	AATTTTACAA	ATAAAGCATT	TTTTTCACTG	CATTCTAGTT	GTGGTTTGTG	5100
CAAACCTCAT	AATGTATCTT	ATCATGTCTG	TATACCGTCG	ACCTCTAGCT	AGAGCTTGGC	5160
GTAATCATGG	TCATAGCTGT	TTCTGTGTG	AAATTTGTTAT	CCGCTCACAA	TTCCACACAA	5220
CATACGAGCC	GGAAGCATAA	AGTGTAAGC	CTGGGGTGCC	TAATGAGTGA	GCTAACTCAC	5280
ATTAATTGCG	TTGCGCTCAC	TGCCCCGCTT	CCAGTCGGGA	AACCTGTCTG	GCCAGCTGCA	5340
TTAATGAATC	GGCCAACGCG	CGGGGAGAGG	CGGTTTGCGT	ATTGGGCGCT	CTTCCGCTTC	5400
CTCGCTCACT	GACTCGCTGC	GCTCGGTCGT	TCGGCTGCGG	CGAGCGGTAT	CAGCTCACTC	5460
AAAGGCGGTA	ATACGGTTAT	CCACAGAATC	AGGGGATAAC	GCAGGAAAGA	ACATGTGAGC	5520
AAAAGGCCAG	CAAAAGGCCA	GGAACCGTAA	AAAGGCCGCG	TTGCTGGCGT	TTTTCCATAG	5580

GCTCCGCCCC	CCTGACGAGC	ATCACAAAAA	TCGACGCTCA	AGTCAGAGGT	GGCGAAACCC	5640
GACAGGACTA	TAAAGATACC	AGGCGTTTCC	CCCTGGAAGC	TCCCTCGTGC	GCTCTCCTGT	5700
TCCGACCCTG	CCGCTTACCG	GATACCTGTC	CGCCTTTCTC	CCTTCGGGAA	GCGTGGCGCT	5760
TTCTCAATGC	TCACGCTGTA	GGTATCTCAG	TTCCGGTGTAG	GTCGTTCGCT	CCAAGCTGGG	5820
CTGTGTGCAC	GAACCCCCCG	TTCAGCCCCG	CCGCTGCGCC	TTATCCGGTA	ACTATCGTCT	5880
TGAGTCCAAC	CCGGTAAGAC	ACGACTTATC	GCCACTGGCA	GCAGCCACTG	GTAACAGGAT	5940
TAGCAGAGCG	AGGTATGTAG	GCGGTGCTAC	AGAGTTCTTG	AAGTGGTGGC	CTAACTACGG	6000
CTACACTAGA	AGGACAGTAT	TTGGTATCTG	CGCTCTGCTG	AAGCCAGTTA	CCTTCGGAAA	6060
AAGAGTTGGT	AGCTCTTGAT	CCGGCAAACA	AACCACCGCT	GGTAGCGGTG	GTTTTTTTGT	6120
TTGCAAGCAG	CAGATTACGC	GCAGAAAAAA	AGGATCTCAA	GAAGATCCTT	TGATCTTTTC	6180
TACGGGGTCT	GACGCTCAGT	GGAACGAAAA	CTCACGTTAA	GGGATTTTGG	TCATGAGATT	6240
ATCAAAAAAG	ATCTTCACCT	AGATCCTTTT	AAATTA AAAA	TGAAGTTTTA	AATCAATCTA	6300
AAGTATATAT	GAGTAAACTT	GGTCTGACAG	TTACCAATGC	TTAATCAGTG	AGGCACCTAT	6360
CTCAGCGATC	TGTCTATTTT	GTTTATCCAT	AGTTGCCTGA	CTCCCCGTCG	TGTAGATAAC	6420
TACGATACGG	GAGGGCTTAC	CATCTGGCCC	CAGTGCTGCA	ATGATACCGC	GAGACCCACG	6480
CTCACC GGCT	CCAGATTTAT	CAGCAATAAA	CCAGCCAGCC	GGAAGGGCCG	AGCGCAGAAG	6540
TGGTCCTGCA	ACTTTATCCG	CCTCCATCCA	GTCTATTAA	TGTTGCCGGG	AAGCTAGAGT	6600
AAGTAGTTCG	CCAGTTAATA	GTTTGCGCAA	CGTTGTTGCC	ATTGCTACAG	GCATCGTGGT	6660
GTCACGCTCG	TCGTTTGGTA	TGGCTTCAAT	CAGCTCCGGT	TCCCAACGAT	CAAGGCGAGT	6720
TACATGATCC	CCCATGTTGT	GCAAAAAAGC	GGTTAGCTCC	TTCGGTCCTC	CGATCGTTGT	6780
CAGAAGTAAG	TTGGCCGCAG	TGTTATCACT	CATGGTTATG	GCAGCACTGC	ATAATTCTCT	6840
TACTGT CATG	CCATCCGTAA	GATGCTTTTC	TGTGACTGGT	GAGTACTCAA	CCAAGTCATT	6900
CTGAGAATAG	TGTATGCGGC	GACCGAGTTG	CTCTTGCCCG	GCGTCAATAC	GGGATAATAC	6960
CGCGCCACAT	AGCAGAACTT	TAAAAGTGCT	CATCATTTGA	AAACGTTCTT	CGGGGCGAAA	7020
ACTCTCAAGG	ATCTTACCGC	TGTTGAGATC	CAGTTCGATG	TAACCCACTC	GTGCACCCAA	7080
CTGATCTTCA	GCATCTTTTA	CTTTCACCAT	CGTTTCTGGG	TGAGCAAAAA	CAGGAAGGCA	7140
AAATGCCGCA	AAAAAGGAA	TAAGGGCGAC	ACGGAATGT	TGAATACTCA	TACTCTTCCT	7200
TTTTCAATAT	TATGAAGCA	TTTATCAGGG	TTATTGTCTC	ATGAGCGGAT	ACATATTTGA	7260
ATGTATTTAG	AAAAATAAAC	AAATAGGGGT	TCCGCGCACA	TTTCCCGGAA	AAGTGCCACC	7320
TGACGTCGAC	GGATCGGGAG	ATCTGCTAGG	TGACCTGAGG	CGCGCCGGCT	TCGAATAGCC	7380
AGAGTAACCT	TTTTTTTTTAA	TTTTATTTTA	TTTTATTTT	GAGATGGAGT	TTGGCGCCGA	7440
TCTCCCGATC	CCCTATGGTC	GACTCTCAGT	ACAATCTGCT	CTGATGCCGC	ATAGTTAAGC	7500
CAGTATCTGC	TCCCTGCTTG	TGTGTTGGAG	GTCGCTGAGT	AGTGCGCGAG	CAAAATTTAA	7560
GCTACAACAA	GGCAAGGCTT	GACCGACAAT	TGCATGAAGA	ATCTGCTTAG	GGTAGGCGT	7620
TTTGCGCTGC	TTCCGATGT	ACGGGCCAGA	TATACGCGTT	GACATTGATT	ATTGACTAGT	7680
TATTAATAGT	AATCAATTAC	GGGGTCATTA	GTTCATAGCC	CATATATGGA	GTTCCGCGTT	7740
ACATAACTTA	CGGTAAATGG	CCCGCCTGGC	TGACCGCCCA	ACGACCCCCG	CCCATTGACG	7800
TCAATAATGA	CGTATGTTCC	CATAGTAACG	CCAATAGGGA	CTTTCCATTG	ACGTCAATGG	7860
GTGGACTATT	TACGGTAAAC	TGCCCCACTT	GCAGTACATC	AAGTGTATCA	TATGCCAAGT	7920
ACGCCCCCTA	TTGACGTCAA	TGACGGTAAA	TGGCCCCGCT	GGCATTATGC	CCAGTACATG	7980
ACCTTATGGG	ACTTTCCTAC	TTGGCAGTAC	ATCTACGTAT	TAGTCATCGC	TATTACCATG	8040
GTGATGCGGT	TTTGGCAGTA	CATCAATGGG	CGTGGATAGC	GGTTTGACTC	ACGGGGATTT	8100
CCAAGTCTCC	ACCCCATTTGA	CGTCAATGGG	AGTTTGTTTT	GGCACCAAAA	TCAACGGGAC	8160
TTTCCAAAAT	GTCGTAACAA	CTCCGCCCCA	TTGACGCAAA	TGGGCGGTAG	GCGTGTACGG	8220
TGGGAGGTCT	ATATAAGCAG	AGCTCTCTGG	CTAACTAGAG	AACCCACTGC	TTACTGGCTT	8280
ATCGAAATTA	ATACGACTCA	CTATAGGGAG	ACCCAAGCTT	G		8321

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8897 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GACGGATCGG	GAGATCTGCT	AGCCCCGGGTG	ACCTGAGGCG	CGCCGGCTTC	GAATAGCCAG	60
AGTAACCTTT	TTTTTTAATT	TTATTTTATT	TTATTTTGA	GATGGAGTTT	GGCGCCGATC	120
TCCCGATCCC	CTATGGTCGA	CTCTCAGTAC	AATCTGCTCT	GATGCCGCAT	AGTTAAGCCA	180
GTATCTGCTC	CCTGCTTGTG	TGTTGGAGGT	CGCTGAGTAG	TGCGCGAGCA	AAATTTAAGC	240
TACAACAAGG	CAAGGCTTGA	CCGACAATTG	CATGAAGAAT	CTGCTTAGGG	TTAGGCGTTT	300
TGCGCTGCTT	CGCGATGTAC	GGGCCAGATA	TACGCGTTGA	CATTGATTAT	TGACTAGTTA	360
TTAATAGTAA	TCAATTACGG	GGTCATTAGT	TCATAGCCCA	TATATGGAGT	TCCGCGTTAC	420
ATAACTTACG	GTAAATGGCC	CGCCTGGCTG	ACCGCCCAAC	GACCCCCGCC	CATTGACGTC	480
AATAATGACG	TATGTTCCCA	TAGTAACGCC	AATAGGGACT	TTCCATTGAC	GTCAATGGGT	540
GGACTATTTA	CGGTAAACTG	CCCACCTGGC	AGTACATCAA	GTGTATCATA	TGCCAAGTAC	600
GCCCCCTATT	GACGTCAATG	ACGGTAAATG	GCCCCGCTGG	CATTATGCCC	AGTACATGAC	660
CTTATGGGAC	TTTCCTACTT	GGCAGTACAT	CTACGTATTA	GTCATCGCTA	TTACCATGGT	720
GATGCGGTTT	TGGCAGTACA	TCAATGGGCG	TGGATAGCGG	TTTGACTCAC	GGGGATTTCC	780
AAGTCTCCAC	CCCATTGACG	TCAATGGGAG	TTTGTTTTGG	CACCAAAATC	AACGGGACTT	840
TCCAAAATGT	CGTAACAAC	CCGCCCATTT	GACGCAAATG	GGCGGTAGGC	GTGTACGGTG	900
GGAGGTCTAT	ATAAGCAGAG	CTCTCTGGCT	AACTAGAGAA	CCCACTGCTT	ACTGGCTTAT	960
CGAAATTAAT	ACGACTCACT	ATAGGGAGAC	CCAAGCTTGG	TACCAATTTA	AATTGATATC	1020
TCCTTAGGTC	TGAGACACCA	TGAAGTTGCC	TGTTAGGCTG	TTGGTGCTGA	TGTTCTGGAT	1080
TCCTGCTTCC	AGCAGTGATG	TTGTTCATGAC	CCAAACCCCA	CTGTCCAGTC	CTGTACAGCT	1140
TGGACAACCT	GCGTCCATCT	CTTGACAGATC	TAGTCAGATC	ATTGTACATA	ATAATGGCAA	1200
CACCTATCTG	GAATGGTACC	AGCAGAGACC	AGGGCAGTCT	CCACGGCTCC	TGATCTACAA	1260
AGTTTCCAAC	CGATTTTCTG	GGGTCCCAGA	CAGGTTTCAGC	GGCAGTGGAG	CTGGGACAGA	1320
TTTCACACTC	AAGATCAGCA	GAGTGGAGGC	TGAGGATGTG	GGAGTTTACT	ACTGCTTCCA	1380
GGGTTACATC	GTTCCATTCA	CGTTCGGCCA	AGGACAAAAG	TTGGAAATCA	AACGTAAGTC	1440
TCGAGTCTCT	AGATAACCGG	TCAATCGATT	GGAATTCATA	ACTCTGAGGG	GGTCGGATGA	1500
CGTGGCCATT	CTTTGCTTAA	AGCATTGAGT	TTACTGCAAG	GTCAGAAAAG	CATGCAAAGC	1560
CCTCAGAATG	GCTGGAAGA	GCTGGAACAA	AACAATTTAG	AACTTTATTA	AGGAATAGGG	1620
GGAAGCTAGG	AAGAAACTCA	AAACATCAAG	ATTTTAAATA	CGCTTCTTGG	TCTCCTTGCT	1680
ATAATTTATC	GGGATTAAGCA	TGCTGTTTTC	TGCTGTGCC	TAACATGCCC	TTATCCGCAA	1740
ACAACACACC	CAAGGGCAGA	ACTTTGTTAC	TTAAACACCA	TCCTGTTTGC	TTCTTTCTCT	1800
AGGAACTGTG	GCTGCACCAT	CTGTCTTCAT	CTTCCCAGCA	TCTGATGAGC	AGTTGAAATC	1860
TGGAAGTGGC	TCTGTTGTGT	GCCTGCTGAA	TAACCTCTAT	CCCAGAGAGG	CCAAAGTACA	1920
GTGGAAGGTG	GATAACGCCC	TCCAATCGGG	TAACCTCCAG	GAGAGTGTC	CAGAGCAGGA	1980
GAGCAAGGAC	AGCACCTACA	GCCTCAGCAG	CACCTGACG	CTGAGCAAAG	CAGACTACGA	2040
GAAACACAAA	GTCTACGCCT	GCGAAGTCAC	CCATCAGGGC	CTGAGCTCGC	CCGTACACAA	2100
GAGCTTCAAC	AGGGGAGAGT	GTTAGAGGGA	GAAGTGCCCC	CACCTGCTCC	TCAGTTCCAG	2160
CCTGACCCCC	TCCCATCCTT	TGGCCTCTGA	CCCTTTTTC	ACAGGGGACC	TACCCCTATT	2220
GCGGTCTCTC	AGCTCATCTT	TCACCTCACC	CCCCCTCTCC	TCCTTGGCTT	TAATTTATGCT	2280
AATGTTGGAG	GAGAATGAAT	AAATAAAGTG	AATCTTTGCA	CCTGTGGTTT	CTCTCTTTCC	2340
TCATTTAATA	ATTATTATCT	GTTGTTTTAC	CAACTACTCA	ATTTCTCTTA	TAAGGGACTA	2400
AATATGTAGT	CATCCTAAGG	CACGTAACCA	TTTATAAAAA	TCATCCTTCA	TTCTATTTTA	2460
CCCTATCATC	CTCTGCAAGA	CAGTCCTCCC	TCAAACCCAC	AAGCCTTCTG	TCCTCACAGT	2520
CCCCTGGGCC	ATGGTAGGAG	AGACTTGCTT	CCTTGTTTTT	CCCTCCTCAG	CAAGCCCTCA	2580
TAGTCCTTTT	TAAGGGTGAC	AGGTCTTACA	GTCAATATATC	CTTTGATTCA	ATTCCCTGAG	2640
AATCAACCAA	AGCAAAATTT	TCAAAAAGAA	AAACCTGCTA	TAAAGAGAAT	CATTCAATTGC	2700
AACATGATAT	AAAAATAACAA	CACAATAAAA	GCAATTAAAT	AAACAAACAA	TAGGGAAAATG	2760
TTTAAAGTTCA	TCATGGTACT	TAGACTTAAT	GGAATGTCAT	GCCTTATTTA	CATTTTTTAAA	2820
CAGGTACTGA	GGGACTCCTG	TCTGCCAAGG	GCCGTATTGA	GTAATTTCCA	CAACCTAATT	2880
TAATCCACAC	TATACTGTGA	GATTAAAAAC	ATTCAATAAA	ATGTTGCAAA	GGTCTATATA	2940
AGCTGAGAGA	CAAAATATAT	CTATAACTCA	GCAATCCCAC	TTCTAGATGA	CTGAGTGTCC	3000
CCACCCACCA	AAAAACTATG	CAAGAATGTT	CAAAGCAGCT	TTATTTACAA	AAGCCAAAAA	3060
TTGGAATAG	CCCGATTGTC	CAACAATAGA	ATGAGTTATT	AAACTGTGGT	ATGTTTATAC	3120
ATTAGAATAC	CCAATGAGGA	GAATTAACAA	GCTACAACCTA	TACCTACTCA	CACAGATGAA	3180
TCTCATAAAA	ATAATGTTAC	ATAAGAGAAA	CTCAATGCAA	AAGATATGTT	CTGTATGTTT	3240
TCATCCATAT	AAAGTTCAAA	ACCAGGTAAA	AATAAAGTTA	GAAATTTGGA	TGGAAATTAC	3300

TCTTAGCTGG	GGGTGGGCGA	GTTAGTGCCT	GGGAGAAGAC	AAGAAGGGGC	TTCTGGGGTC	3360
TTGGTAATGT	TCTGTTCCCTC	GTGTGGGGTT	GTGCAGTTAT	GATCTGTGCA	CTGTTCTGTA	3420
TACACATTAT	GCTTCAAAAT	AACTTCACAT	AAAGAACATC	TTATACCCAG	TTAATAGATA	3480
GAAGAGGAAT	AAGTAATAGG	TCAAGACCAA	CGCAGCTGGT	AAGTGGGGGC	CTGGGATCAA	3540
ATAGCTACCT	GCCTAATCCT	GCCCWCTTGA	GCCCTGAATG	AGTCTGCCTT	CCAGGGCTCA	3600
AGGTGCTCAA	CAAAACAACA	GGCCTGCTAT	TTTCCTGGCA	TCTGTGCCCT	GTTTGGCTAG	3660
CTAGGAGCAC	ACATACATAG	AAATTAAATG	AAACAGACCT	TCAGCAAGGG	GACAGAGGAC	3720
AGAATTAACC	TTGCCCAGAC	ACTGGAAACC	CATGTATGAA	CACTCACATG	TTTGGGAAGG	3780
GGGAAGGGCA	CATGTAAATG	AGGACTCTTC	CTCATTTCTAT	GGGGCACTCT	GGCCCTGCCC	3840
CTCTCAGCTA	CTCATCCATC	CAACACACCT	TTCTAAGTAC	CTCTCTCTGC	CTACACTCTG	3900
AAGGGGTTCA	GGAGTAACTA	ACACAGCATC	CCTTCCCTCA	AATGACTGAC	AATCCCTTTG	3960
TCCTGCTTTG	TTTTTCTTTC	CAGTCAGTAC	TGGGAAAGTG	GGGAAGGACA	GTCATGGAGA	4020
AACTACATAA	GGAAGCACCT	TGCCCTTCTG	CCTCTTGAGA	ATGTTGATGA	GTATCAAATC	4080
TTTCAAACCT	TGGAGGTTTG	AGTAGGGGTG	AGACTCAGTA	ATGTCCCTTC	CAATGACATG	4140
AACTTGCTCA	CTCATCCCTG	GGGGCCAAAT	TGAACAATCA	AAGGCAGGCA	TAATCCAGTT	4200
ATGAATTCTT	GCGGCCGCTT	GCTAGCTTCA	CGTGTGATG	CCAACCGCGG	AAGGGCCCTA	4260
TTCTATAGTG	TCACCTAAAT	GCTAGAGCTC	GCTGATCAGC	CTCGACTGTG	CCTTCTAGTT	4320
GCCAGCCATC	TGTTGTTTGC	CCCTCCCCCG	TGCCCTTCTT	GACCCCTGGAA	GGTGCCACTC	4380
CCACTGTCTT	TTCTTAATAA	AATGAGGAAA	TTGCATCGCA	TTGTCTGAGT	AGGTGTCATT	4440
CTATTCTGGG	GGGTGGGGTG	GGGCAGGACA	GCAAGGGGGA	GGATTGGGAA	GACAATAGCA	4500
GGCATGCTGG	GGATGCGGTG	GGCTCTATGG	CTTCTGAGGC	GGAAAGAACC	AGCTGGGGCT	4560
CTAGGGGGTA	TCCCCACGCG	CCCTGTAGCG	GCGCATTAAG	CGCGGCGGGT	GTGGTGGTTA	4620
CGCGCAGCGT	GACCGCTACA	CTTGCCAGCG	CCCTAGCGCC	CGCTCCTTTC	GCTTCTTCC	4680
CTTCCTTTCT	CGCCACGTTT	GCCGGGCCTC	TCAAAAAAGG	GAAAAAAGC	ATGCATCTCA	4740
ATTAGTCAGC	AACCATAGTC	CCGCCCTTAA	CTCCGCCCAT	CCCGCCCTTA	ACTCCGCCCA	4800
GTTCCGCCCC	TTCTCCGCCC	CATGGCTGAC	TAATTTTCTT	TATTTATGCA	GAGGCCGAGG	4860
CCGCTCTGGC	CTCTGAGCTA	TTCCAGAAGT	AGTGAGGAGG	CTTTTTTTGGA	GGCCTAGGCT	4920
TTTGCACAAA	CCTTGGACAG	CTCAGGGCTG	CGATTTCGCG	CCAAACTTGA	CGGCAATCCT	4980
AGCGTGAAAG	CTGGTAGGAT	TTTATCCCCG	CTGCCATGAT	GGTTCGAACA	TTGAACTGCA	5040
TCGTCGCCGT	GTCCCAAAAT	ATGGGGATTG	GCAAGAACGG	AGACCTACCC	TGGCCTCCGC	5100
TCAGGAACGA	GTTCAAGTAC	TTCCAAAAGAA	TGACCACAAC	CTCTTCAGTG	GAAGGTAAAC	5160
AGAATCTGGT	GATTATGGGT	AGGAAAACCT	GGTCTCCAT	TCCTGAGAAG	AATCGACCTT	5220
TAAAGGACAG	AATTAATATA	GTTCTCAGTA	GAGAACTCAA	AGAACCACCA	CGAGGAGCTC	5280
ATTTTCTTGC	CAAAAGTTTG	GATGATGCCT	TAAGACTTAT	TGAACAACCG	GAATTGGCAA	5340
GTAAGTAGA	CATGGTTTGG	ATAGTCGGAG	GCAGTTCTGT	TTACCAGGAA	GCCATGAATC	5400
AACCAGGCCA	CCTTAGACTC	TTTGTGACAA	GGATCATGCA	GGAATTTGAA	AGTGACACGT	5460
TTTTCCCAGA	AATTGATTTG	GGGAAATATA	AACTTCTCCC	AGAATACCCA	GGCGTCCTCT	5520
CTGAGGTCCA	GGAGGAAAAA	GGCATCAAGT	ATAAGTTTGA	AGTCTACGAG	AAGAAAAGACT	5580
AACAGGAAGA	TGCTTTCAAG	TTCTCTGCTC	CCCTCCTAAA	GCTATGCATT	TTTATAAGAC	5640
CATGGGACTT	TTGCTGGCTT	TAGATCTCTT	TGTGAAGGAA	CCTTACTTCT	GTGGTGTGAC	5700
ATAATTGGAC	AAACTACCTA	CAGAGATTTA	AAGCTCTAAG	GTAAATATAA	AATTTTAAAG	5760
TGTATAATGT	GTTAAACTAC	TGATTCTAAT	TGTTTGTGTA	TTTTAGATTG	CAACCTATGG	5820
AACTGATGAA	TGGGAGCAGT	GGTGGAATGC	CTTTAATGAG	GAAAACCTGT	TTTGCTCAGA	5880
AGAAATGCCA	TCTAGTGATG	ATGAGGCTAC	TGCTGACTCT	CAACATTCTA	CTCCTCCAAA	5940
AAAGAAGAGA	AAGGTAGAAG	ACCCCAAGGA	CTTTCCTTCA	GAATTGCTAA	GTTTTTTTGG	6000
TCATGCTGTG	TTTAGTAATA	GAACCTTTGC	TTGCTTTTGT	ATTTACACCA	CAAAAGGAAAA	6060
AGCTGCACTG	CTATACAAGA	AAATTATGGA	AAAAATATTCT	GTAACCTTTA	TAAGTAGGCA	6120
TAACAGTTAT	AATCATAACA	TACTGTTTTT	TCTTACTCCA	CACAGGCATA	GAGTGTCTGC	6180
TATTAATAAC	TATGCTCAAA	AATTGTGTAC	CTTTAGCTTT	TTAATTTGTA	AAGGGGTAA	6240
TAAGGAATAT	TTGATGTATA	GTGCCCTGAC	TAGAGATCAT	AATCAGCCAT	ACCACATTTG	6300
TAGAGGTTTT	ACTTGCTTTA	AAAAACCTCC	CACACCTCCC	CCTGAACCTG	AAACATAAAA	6360
TGAATGCAAT	TGTTGTGTGT	AACTTGTTTA	TTGCAGCTTA	TAATGGTTAC	AAATAAAGCA	6420
ATAGCATCAC	AAATTCACA	AATAAAGCAT	TTTTTTCACT	GCATTCTAGT	TGTGGTTTGT	6480
CCAACTCAT	CAATGTATCT	TATCATGTCT	GGATCGGCTG	GATGATCCTC	CAGCGCGGGG	6540
ATCTCATGCT	GGAGTTCTTC	GCCCAACCCA	ACTTGTTTAT	TGCAGCTTAT	AATGGTTACA	6600
AATAAAGCAA	TAGCATCACA	AATTTTCACAA	ATAAAGCATT	TTTTTTCACTG	CATTCTAGTT	6660
GTGGTTTGTG	CAAACTCATC	AATGTATCTT	ATCATGTCTG	TATACCGTCG	ACCTCTAGCT	6720

AGAGCTTGGC	GTAATCATGG	TCATAGCTGT	TTCCTGTGTG	AAATTGTTAT	CCGCTCACAA	6780
TTCCACACAA	CATACGAGCC	GGAAGCATAA	AGTGTAAGC	CTGGGGTGCC	TAATGAGTGA	6840
GCTAACTCAC	ATTAATTGCG	TTGCGCTCAC	TGCCCCTTTT	CCAGTCGGGA	AACCTGTCGT	6900
GCCAGCTGCA	TTAATGAATC	GGCCAACGCG	CGGGGAGAGG	CGGTTTGCGT	ATTGGGCGCT	6960
CTTCCGCTTC	CTCGCTCACT	GACTCGCTGC	GCTCGGTGCT	TCGGCTGCGG	CGAGCGGTAT	7020
CAGCTCACTC	AAAGGCGGTA	ATACGGTTAT	CCACAGAATC	AGGGGATAAC	GCAGGAAAGA	7080
ACATGTGAGC	AAAAGGCCAG	CAAAAGGCCA	GGAACCGTAA	AAAGGCCGCG	TTGCTGGCGT	7140
TTTTCATAG	GCTCCGCCCC	CCTGACGAGC	ATCACAAAAA	TCGACGCTCA	AGTCAGAGGT	7200
GGCGAAACCC	GACAGGACTA	TAAAGATACC	AGGCGTTTCC	CCCTGGAAGC	TCCCTCGTGC	7260
GCTCTCCTGT	TCCGACCCTG	CCGCTTACCG	GATACCTGTC	CGCCTTTCTC	CCTTCGGGAA	7320
GCGTGGCGCT	TTCTCAATGC	TCACGCTGTA	GGTATCTCAG	TTCCGGTGTAG	GTCGTTTCGT	7380
CCAAGCTGGG	CTGTGTGCAC	GAACCCCCCG	TTACAGCCGA	CCGCTGCGCC	TTATCCGGTA	7440
ACTATCGTCT	TGAGTCCAAC	CCGGTAAGAC	ACGACTTATC	GCCACTGGCA	GCAGCCACTG	7500
GTAACAGGAT	TAGCAGAGCG	AGGTATGTAG	GCGGTGCTAC	AGAGTTCTTG	AAGTGGTGGC	7560
CTAACTACGG	CTACACTAGA	AGGACAGTAT	TTGGTATCTG	CGCTCTGCTG	AAGCCAGTTA	7620
CCTTCGAAA	AAGAGTTGGT	AGCTCTTGAT	CCGGCAAACA	AACCACCGCT	GGTAGCGGTG	7680
GTTTTTTTGT	TTGCAAGCAG	CAGATTACGC	GCAGAAAAAA	AGGATCTCAA	GAAGATCCTT	7740
TGATCTTTTC	TACGGGGTCT	GACGCTCAGT	GGAACGAAAA	CTCACGTAA	GGGATTTTGG	7800
TCATGAGATT	ATCAAAAAGG	ATCTTCACCT	AGATCCTTTT	AAATTAAAAA	TGAAGTTTTA	7860
AATCAATCTA	AAGTATATAT	GAGTAAACTT	GGTCTGACAG	TTACCAATGC	TTAATCAGTG	7920
AGGCACCTAT	CTCAGCGATC	TGTCTATTTT	GTTCATCCAT	AGTTGCCTGA	CTCCCCGTCG	7980
TGTAGATAAC	TACGATACGG	GAGGGCTTAC	CATCTGGCCC	CAGTGCTGCA	ATGATACCGC	8040
GAGACCCACG	CTCACCGGCT	CCAGATTTAT	CAGCAATAAA	CCAGCCAGCC	GGAAGGGCCG	8100
AGCGCAGAA	TGGTCTTGCA	ACTTTATCCG	CCTCCATCCA	GTCTATTAAT	TGTTGCCGGG	8160
AAGCTAGAGT	AAGTAGTTCG	CCAGTTAATA	GTTTGCGCAA	CGTTGTTGCC	ATTGCTACAG	8220
GCATCGTGGT	GTCACGCTCG	TCGTTTGGTA	TGGCTTCATT	CAGCTCCGGT	TCCCAACGAT	8280
CAAGCGGAGT	TACATGATCC	CCCATGTTGT	GCAAAAAAGC	GGTTAGCTCC	TTCCGGTCTC	8340
CGATCGTTGT	CAGAAGTAAG	TTGGCCGCGC	TGTTATCACT	CATGGTTATG	GCAGCACTGC	8400
ATAATTETCT	TACTGTCTATG	CCATCCGTAA	GATGCTTTTC	TGTGACTGGT	GAGTACTCAA	8460
CCAAGTCATT	CTGAGAATAG	TGTATGCGGC	GACCGAGTTG	CTCTTGCCCC	GCGTCAATAC	8520
GGGATAATAC	CGCGCCACAT	AGCAGAACTT	TAAAAGTGCT	CATCATTTGA	AAACGTTCTT	8580
CGGGGCGAAA	ACTCTCAAGG	ATCTTACCGC	TGTTGAGATC	CAGTTTCGAT	TAACCCACTC	8640
GTGCACCCAA	CTGATCTTCA	GCATCTTTTA	CTTTCACCAG	CGTTTCTGGG	TGAGCAAAAA	8700
CAGGAAGGCA	AAATGCCGCA	AAAAAGGGAA	TAAGGGCGAC	ACGAAATGT	TGAATACTCA	8760
TACTCTTCCT	TTTTCAATAT	TATTGAAGCA	TTTATCAGGG	TTATTGTCTC	ATGAGCGGAT	8820
ACATATTTGA	ATGTATTTAG	AAAAATAAAC	AAATAGGGGT	TCCGCGCACA	TTTCCCCGAA	8880
AAGTGCCACC	TGACGTC					8897

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GAAGAGGAAG ACTGACGGTG CCCCCGCGAG TTCAGGTGCT GAGG

44

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CCTCAGCACC TGAACGCG GGGGCACCGT CAGTCTTCCT CTTC

44

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

CTGGGAGGGC TTTGTTGGAG ACCGAGCACG AGTACGACTT GCCATTCAGC C

51

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

GATGGTTTTC TCGATGGCGG CTGGGAGGGC

30

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GCCCTCCCAG CCGCCATCGA GAAAACCATC

30

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

GATGGTTTTTC TCGATAGCGG CTGGGAGGGC TTTG

34

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 81 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

GATGGTTTTTC TCGATGGCGG CTGGGAGGGC TTTGTTGGAG ACCGAGCACG AGTACGACTT
GCCATTCAGC CAGTCCTGGT G

60

81

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 81 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

CACCAGGACT GGCTGAATGG CAAGTCGTAC TCGTGCTCGG TCTCCAACAA AGCCCTCCCA
GCCGCCATCG AGAAAACCAT C

60

81

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8690 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

GGTACCAATT TAAATTGATA TCTCCTTAGG TCTCGAGTCT CTAGATAACC GGTCAATCGA 60
TTGGAATTCT TGCGGCCGCT TGCTAGCCAC CATGGAGTTG TGGTTAAGCT TGGTCTTCCT 120
TGTCCTTGTT TTAAGAGGTG TCCAGTGTGA AGTGCAACTG GTGGAGTCTG GGGGAGGCTT 180
AGTGCAGCCT GGAGGGTCCC TGCGACTTTC CTGTGCTGCA TCTGGATTCC CGTTCAGTGA 240
CTATTACATG TATTGGGTTT GCCAGGCTCC AGGCAAGGGA CTGGAGTGGG TCTCATACAT 300
TAGTCAAGAT GGTGATATAA CCGACTATGC AGACTCCGTA AAGGGTTCGAT TCACCATCTC 360
CAGAGACAAT GCAAAGAACA GCCTGTACCT GCAAATGAAC AGCCTGAGGG ACGAGGACAC 420

AGCCGTGTAT	TACTGTGCAA	GAGGCCTGGC	GGACGGGGCC	TGGTTTGCTT	ACTGGGGCCA	480
AGGGACTCTG	GTCACGGTCT	CTTCCGCTAG	CACCAAGGGC	CCATCGGTCT	TCCCCCTGGC	540
ACCCCTCCTC	AAGAGCACCT	CTGGGGGCAC	AGCGGGCCCTG	GGCTGCCTGG	TCAAGGACTA	600
CTTCCCCGAA	CCGGTGACGG	TGTCGTGGAA	CTCAGGCGCC	CTGACCAGCG	GCGTGACACAC	660
CTTCCCGGCT	GTCCTACAGT	CCTCAGGACT	CTACTCCCTC	AGCAGCGTGG	TCACCGTGCC	720
CTCCAGCAGC	TTGGGCACCC	AGACCTACAT	CTGCAACGTG	AATCACAAGC	CCAGCAACAC	780
CAAGGTGGAC	AAGAAAGTTG	GTGAGAGGCC	AGCACAGGGA	GGGAGGGTGT	CTGCTGGAAG	840
CCAGGCTCAG	CGCTCCTGCC	TGGACGCATC	CCGGCTATGC	AGCCCCAGTC	CAGGGCAGCA	900
AGGCAGGCCC	CGTCTGCCTC	TTACCCCGGA	GGCCTCTGCC	CGCCCCACTC	ATGCTCAGGG	960
AGAGGGTCTT	CTGGCTTTTTT	CCCCAGGCTC	TGGGCAGGCA	CAGGCTAGGT	GCCCCTAACC	1020
CAGGCCCTGC	ACACAAAGGG	GCAGGTGCTG	GGCTCAGACC	TGCCAAGAGC	CATATCCGGG	1080
AGGACCCCTG	CCCTGACCTA	AGCCCACCCC	AAAGGCCAAA	CTCTCCACTC	CCTCAGCTCG	1140
GACACCTTCT	CTCTCCCAG	ATTCCAGTAA	CTCCCAATCT	TCTCTCTGCA	GAGCCCAAAT	1200
CTTGTGACAA	AACTCACACA	TGCCCACCGT	GCCCAGGTAA	GCCAGCCCAG	GCCTCGCCCT	1260
CCAGCTCAAG	GCGGGACAGG	TGCCCTAGAG	TAGCCTGCAT	CCAGGGACAG	GCCCCAGCCG	1320
GGTGCTGACA	CGTCCACCTC	CATCTCTTCC	TCAGCACCTG	AACTCCTGGG	GGGACCGTCA	1380
GTCTTCTCT	TCCCCCAAA	ACCCAAGGAC	ACCTCATGA	TCTCCCGGAC	CCCTGAGGTC	1440
ACATGCGTGG	TGGTGGACGT	GAGCCACGAA	GACCCTGAGG	TCAAGTTCAA	CTGGTACGTG	1500
GACGGCGTGG	AGGTGCATAA	TGCCAAGACA	AAGCCGCGGG	AGGAGCAGTA	CAACAGCACG	1560
TACCGTGTGG	TCAGCGTCCT	CACCGTCCTG	CACCAGGACT	GGCTGAATGG	CAAGGAGTAC	1620
AAGTGCAAGG	TCTCCAACAA	AGCCCTCCCA	GCCCCATCG	AGAAAACCAT	CTCCAAAGCC	1680
AAAGGTGGGA	CCCGTGGGGT	GCGAGGGCCA	CATGGACAGA	GGCCGGCTCG	GCCCACCCCTC	1740
TGCCCTGAGA	GTGACCCTG	TACCAACCTC	TGTCCCTACA	GGGCAGCCCC	GAGAACCACA	1800
GGTGTAACCC	CTGCCCCCAT	CCCGGGATGA	GCTGACCAAG	AACCAGGTCA	GCCTGACCTG	1860
CCTGGTCAAA	GGCTTCTATC	CCAGCGACAT	CGCCGTGGAG	TGGGAGAGCA	ATGGGCAGCC	1920
GGAGAACAAC	TACAAGACCA	CGCCTCCCGT	GCTGGACTCC	GACGGCTCCT	TCTTCTCTTA	1980
CAGCAAGCTC	ACCGTGACA	AGAGCAGGTG	GCAGCAGGGG	AACGCTTTCT	CATGCTCCGT	2040
GATGCATGAG	GCTCTGCACA	ACCACTACAC	GCAGAAGAGC	CTCTCCCTGT	CTCCGGGTAA	2100
ATGAGTGCAG	CGGCCGGCAA	GCCCCCGCTC	CCCGGGCTCT	CGCGGTGCGA	CGAGGATGCT	2160
TGGCACGTAC	CCCCTGTACA	TACTTCCCAG	GCGCCCAGCA	TGGAAATAAA	GCACCCAGCG	2220
CTGCCCTGGG	CCCCTGCGAG	ACTGTGATGG	TTCTTTCCAC	GGGTCAGGCC	GAGTCTGAGG	2280
CCTGAGTGGC	ATGAGGGAGG	CAGAGCGGGT	CCCCTGTGCC	CCACTCTGGC	CCAGGCTGTG	2340
CAGGTGTGCC	TGGGCCCCCT	AGGGTGGGGC	TCAGCCAGGG	GCTGCCCTCG	GCAGGGTGGG	2400
GGATTTGCCA	GCGTGGCCCT	CCCTCCAGCA	GCACCTGCCC	TGGGCTGGGC	CACGGGAAGC	2460
CCTAGGAGCC	CCTGGGGACA	GACACACAGC	CCCTGCCTCT	GTAGGAGACT	GTCTGTCTCT	2520
GTGAGCGCCC	CTGTCTCCC	GACCTCCATG	CCCCTCGGG	GGCATGCCTA	GTCCATGTGC	2580
GTAGGGACAG	GCCCTCCCTC	ACCCATCTAC	CCCCACGGCA	CTAACCCCTG	GCTGCCCTGC	2640
CCAGCCTCGC	ACCCGCATGG	GGACACAACC	GACTCCGGGG	ACATGCACTC	TCGGGCCCTG	2700
TGGAGGGACT	GGTGACAGTG	CCCACACACA	CACTCAGCCC	AGACCCGTTT	AACAAACCCC	2760
GCACTGAGGT	TGGCCGGCCA	CACGGCCACC	ACACACACAC	GTGCACGCTT	CACACACGGA	2820
GCCTCACCCG	GGCGAACTGC	ACAGCACCCA	GACCAGAGCA	AGGTCTCTGC	ACACGTGAAC	2880
ACTCTCGGA	CACAGGCCCC	CACGAGCCCC	ACGCGGCACC	TCAAGGCCCA	CGAGCCTCTC	2940
GGCAGCTTCT	CCACATGCTG	ACCTGCTCAG	ACAAACCCAG	CCCTCCTCTC	ACAAGGGTGC	3000
CCCTGCAGCC	GCCACACACA	CACAGGGGAT	CACACACCAC	GTCACGTCCC	TGGCCCTGGC	3060
CCACTTCCCA	TGTGTCCTT	TCCCTGCAGG	ACGGATCAGC	CTCGACTGTG	CCTTCTAGTT	3120
GCCAGCCATC	TGTGTGTTGC	CCCTCCCCCG	TGCCTTCTTT	GACCCCTGGAA	GGTGCCACTC	3180
CCACTGTCTT	TTCTTAATAA	AATGAGGAAA	TTGCATCGCA	TTGTCTGAGT	AGGTGTCATT	3240
CTATTCTGGG	GGGTGGGGTG	GGGCAGGACA	GCAAGGGGGA	GGATTGGGAA	GACAATAGCA	3300
GGCATGCTGG	GGATGCGGTG	GGCTCTATGG	CTTCTGAGGC	GGAAAGAACC	AGCTGGGGCT	3360
CTAGGGGGTA	TCCCCACGCG	CCCTGTAGCG	GCGCATTAAG	CGCGGCGGGT	GTGGTGGTTA	3420
CGCGCAGCGT	GACCGCTACA	CTTGCCAGCG	CCCTAGCGCC	CGCTCCTTTC	GCTTTCTTCC	3480
CTTCTTTTCT	CGCCACGTTC	GCCGGGCCTC	TCAAAAAAGG	GAAAAAAAGC	ATGCATCTCA	3540
ATTAGTCAGC	AACCATAGTC	CCGCCCTTAA	CTCCGCCCAT	CCCGCCCTTA	ACTCCGCCCA	3600
GTTCCGCCCA	TTCTCCGCCC	CATGGCTGAC	TAATTTTCTT	TATTTATGCA	GAGGCCGAGG	3660
CCGCCCTCGC	CTCTGAGCTA	TTCCAGAAGT	AGTGAGGAGG	CTTTTGTGGA	GGCCTAGGCT	3720
TTTGCAAAAA	GCTTGGACAG	CTCAGGGCTG	CGATTTTCGC	CCAAACTTGA	CGGCAATCCT	3780
AGCGTGAAGG	CTGGTAGGAT	TTTATCCCCG	CTGCCATCAT	GGTTCGACCA	TTGAACTGCA	3840

TCGTCGCCGT	GTCCCAAAAT	ATGGGGATTG	GCAAGAACGG	AGACCTACCC	TGGCCTCCGC	3900
TCAGGAACGA	GTTCAAGTAC	TTCAAAAGAA	TGACCACAAC	CTCTTCAGTG	GAAGGTAAAC	3960
AGAATCTGGT	GATTATGGGT	AGGAAAACCT	GGTTCTCCAT	TCCTGAGAAG	AATCGACCTT	4020
TAAAGGACAG	AATTAATATA	GTTCTCAGTA	GAGAACTCAA	AGAACCACCA	CGAGGAGCTC	4080
ATTTTCTTGC	CAAAAAGTTG	GATGATGCCCT	TAAGACTTAT	TGAACAACCG	GAATTGGCAA	4140
GTAAAGTAGA	CATGGTTTGG	ATAGTCGGAG	GCAGTTCTGT	TTACCAGGAA	GCCATGAATC	4200
AACCAGGCCA	CCTTAGACTC	TTTGTGACAA	GGATCATGCA	GGAATTTGAA	AGTGACACGT	4260
TTTTCCCAGA	AATTGATTTG	GGGAAATATA	AACTTCTCCC	AGAATACCCA	GGCGTCCCTCT	4320
CTGAGGTCCA	GGAGGAAAAA	GGCATCAAGT	ATAAGTTTGA	AGTCTACGAG	AAGAAAAGACT	4380
AACAGGAAGA	TGCTTTCAAG	TTCTCTGCTC	CCCTCCTAAA	GCTATGCATT	TTTATAAGAC	4440
CATGGGACTT	TTGCTGGCTT	TAGATCTCTT	TGTGAAGGAA	CCTTACTTCT	GTGGTGTGAC	4500
ATAATTGGAC	AAACTACCTA	CAGAGATTTA	AAGCTCTAAG	GTAAATATAA	AATTTTAAAG	4560
TGTATAATGT	GTTAAACTAC	TGATTCTAAT	TGTTTGTGTA	TTTTAGATTTC	CAACCTATGG	4620
AACTGATGAA	TGGGAGCAGT	GGTGGAAATGC	CTTTAATGAG	GAAAACCTGT	TTTGCTCAGA	4680
AGAAATGCCA	TCTAGTGATG	ATGAGGCTAC	TGCTGACTCT	CAACATTCTA	CTCCTCCAAA	4740
AAAGAAGAGA	AAGGTAGAAG	ACCCCAAGGA	CTTTCCCTTCA	GAATTGCTAA	GTTTTTTTGAG	4800
TCATGCTGTG	TTTAGTAATA	GAACCTTTCG	TTGCTTTGCT	ATTTACACCA	CAAAGGAAAA	4860
AGCTGCACTG	CTATACAAGA	AAATTATGGA	AAAATATTCT	GTAACCTTTA	TAAGTAGGCA	4920
TAACAGTTAT	AATCATAACA	TACTGTTTTT	TCTTACTCCA	CACAGGCATA	GAGTGTCTGC	4980
TATTAATAAC	TATGCTCAAA	AATTGTGTAC	CTTTAGCTTT	TTAATTTGTA	AAGGGGTAA	5040
TAAGGAATAT	TTGATGTATA	GTGCCCTTGAC	TAGAGATCAT	AATCAGCCAT	ACCACATTTG	5100
TAGAGGTTTT	ACTTGCTTTA	AAAAACCTCC	CACACCTCCC	CCTGAACCTG	AAACATAAAA	5160
TGAATGCAAT	TGTTGTTGTT	AACTTGTTTA	TTGCAGCTTA	TAATGGTTAC	AAATAAAGCA	5220
ATAGCATCAC	AAATTTTACA	AATAAAGCAT	TTTTTTTCACT	GCATTCTAGT	TGTGGTTTGT	5280
CCAAACTCAT	CAATGTATCT	TATCATGTCT	GGATCGGCTG	GATGATCCTC	CAGCGCGGGG	5340
ATCTCATGCT	GGAGTTCTTC	GCCCACCCCA	ACTTGTTTAT	TGCAGCTTAT	AATGGTTACA	5400
AATAAAGCAA	TAGACTCACA	AATTTTACAA	ATAAAGCATT	TTTTTCACTG	CATTCTAGTT	5460
GTGGTTTGTG	CAAACTCATC	AATGTATCTT	ATCAATGTCTG	TATACCGTCG	ACCTCTAGCT	5520
AGAGCTTTGGC	GTAATCATGG	TCATAGCTGT	TTCTGTGTG	AAATTGTTAT	CCGCTCAGCA	5580
TTCCACACAA	CATACGAGCC	GGAAGCATAA	AGTGTAAGC	CTGGGGTGCC	TAATGAGTGA	5640
GCTAACTCAC	ATTAATTGCG	TTGCGCTCAC	TGCCCGCTTT	CCAGTCGGGA	AACCTGTCGT	5700
GCCAGCTGCA	TTAATGAATC	GGCCAACGCG	CGGGGAGAGG	CGGTTTGCGT	ATTGGGCGCT	5760
CTTCCGCTTC	CTCGCTCACT	GACTCGCTGC	GCTCGGTGCT	TCGGCTGCGG	CGAGCGGTAT	5820
CAGCTCACTC	AAAGGCGGTA	ATACGGTTAT	CCACAGAATC	AGGGGATAAC	GCAGGAAAGA	5880
ACATGTGAGC	AAAAGGCCAG	CAAAAGGCCA	GGAACCGTAA	AAAGGCCGCG	TTGCTGGCGT	5940
TTTTCCATAG	GCTCCGCCCC	CCTGACGAGC	ATCACAAAAA	TCGACGCTCA	AGTCAGAGGT	6000
GGCGAAACCC	GACAGGACTA	TAAAGATACC	AGGCGTTTTCC	CCCTGGAAGC	TCCCTCGTGC	6060
GCTCTCCTGT	TCCGACCCTG	CCGCTTACCG	GATACCTGTC	CGCCTTTCTC	CCTTCGGGAA	6120
GCGTGGCGCT	TTCTCAATGC	TCACGCTGTA	GGTATCTCAG	TTCCGGTGTAG	GTCGTTTCGCT	6180
CCAAGCTGGG	CTGTGTGCAC	GAACCCCCCG	TTCAGCCCCG	CCGCTGCGCC	TTATCCGGTA	6240
ACTATCGTCT	TGAGTCCAAC	CCGGTAAGAC	ACGACTTATC	GCCACTGGCA	GCAGCCACTG	6300
GTAACAGGAT	TAGCAGAGCG	AGGTATGTAG	GCGGTGCTAC	AGAGTTCTTG	AAGTGGTGGC	6360
CTAACTACGG	CTACACTAGA	AGGACAGTAT	TTGGTATCTG	CGCTCTGCTG	AAGCCAGTTA	6420
CCTTCGGAAA	AAGAGTTGGT	AGCTCTTGAT	CCGGCAAAACA	AACCACCGCT	GGTAGCGGTG	6480
GTTTTTTTGT	TTGCAAGCAG	CAGATTACGC	GCAGAAAAAA	AGGATCTCAA	GAAGATCCTT	6540
TGATCTTTTC	TACGGGGTCT	GACGCTCAGT	GGAACGAAAA	CTCACGTTAA	GGGATTTTGG	6600
TCATGAGATT	ATCAAAAAGG	ATCTTCACCT	AGATCCTTTT	AAATTAAAAA	TGAAGTTTTA	6660
AATCAATCTA	AAGTATATAT	GAGTAAACTT	GGTCTGACAG	TTACCAATGC	TTAATCAGTG	6720
AGGCACCTAT	CTCAGCGATC	TGTCTATTTT	GTTTCATCCAT	AGTTGCCTGA	CTCCCCGTCG	6780
TGTAGATAAC	TACGATACGG	GAGGGCTTAC	CATCTGGCCC	CAGTGCTGCA	ATGATACCGC	6840
GAGACCCACG	CTCACCGGCT	CCAGATTTAT	CAGCAATAAA	CCAGCCAGCC	GGAAGGGCCG	6900
AGCGCAGAAG	TGGTCTTGCA	ACTTTATCCG	CCTCCATCCA	GTCTATTAAT	TGTTGCCGGG	6960
AAGCTAGAGT	AAGTAGTTCG	CCAGTTAATA	GTTTGCGCAA	CGTTGTTGCC	ATTGCTACAG	7020
GCATCGTGGT	GTCACGCTCG	TCGTTTGGTA	TGGCTTCATT	CAGCTCCGGT	TCCCAACGAT	7080
CAAGGCGAGT	TACATGATCC	CCCATGTTGT	GCAAAAAAGC	GGTTAGCTCC	TTCCGGTCCCTC	7140
CGATCGTTGT	CAGAAGTAAG	TTGGCCGCAG	TGTTATCACT	CATGGTTATG	GCAGCACTGC	7200
ATAATTCTCT	TACTGTCATG	CCATCCGTAA	GATGCTTTTC	TGTGACTGGT	GAGTACTCAA	7260

CCAAGTCATT	CTGAGAATAG	TGTATGCGGC	GACCGAGTTG	CTCTTGCCCCG	GCGTCAATAC	7320
GGGATAATAC	CGCGCCACAT	AGCAGAACTT	TAAAAGTGCT	CATCATTGGA	AAACGTTCTT	7380
CGGGGCGAAA	ACTCTCAAGG	ATCTTACCGC	TGTTGAGATC	CAGTTCGATG	TAACCCACTC	7440
GTGCACCCAA	CTGATCTTCA	GCATCTTTTA	CTTTCACCAG	CGTTTCTGGG	TGAGCAAAAA	7500
CAGGAAGGCA	AAATGCCGCA	AAAAAGGGAA	TAAGGGCGAC	ACGGAAATGT	TGAATACTCA	7560
TACTCTTCCT	TTTTCAATAT	TATTGAAGCA	TTTATCAGGG	TTATTGTCTC	ATGAGCGGAT	7620
ACATATTTGA	ATGTATTTAG	AAAAATAAAC	AAATAGGGGT	TCCGCGCACA	TTTCCCCGAA	7680
AAGTGCCACC	TGACGTCGAC	GGATCGGGAG	ATCTGCTAGG	TGACCTGAGG	CGCGCCGGCT	7740
TCGAATAGCC	AGAGTAACCT	TTTTTTTAA	TTTTATTTTA	TTTTATTTTT	GAGATGGAGT	7800
TTGGCGCCGA	TCTCCCGATC	CCCTATGGTC	GACTCTCAGT	ACAATCTGCT	CTGATGCCGC	7860
ATAGTTAAGC	CAGTATCTGC	TCCCTGCTTG	TGTGTTGGAG	GTCGCTGAGT	AGTGCGCGAG	7920
CAAAATTTAA	GCTACAACAA	GGCAAGGCTT	GACCGACAAT	TGCATGAAGA	ATCTGCTTAG	7980
GGTTAGGCGT	TTTGCGCTGC	TTGCGGATGT	ACGGGCCAGA	TATACGCGTT	GACATTGATT	8040
ATTGACTAGT	TATTAATAGT	AATCAATTAC	GGGGTCATTA	GTTTCATAGC	CATATATGGA	8100
GTTCCGCGTT	ACATAACTTA	CGGTAAATGG	CCCGCTGGC	TGACCGCCCA	ACGACCCCCG	8160
CCCATTGACG	TCAATAATGA	CGTATGTTCC	CATAGTAACG	CCAATAGGGA	CTTTCATTG	8220
ACGTCAATGG	GTGGACTATT	TACGGTAAAC	TGCCCACTTG	GCAGTACATC	AAGTGTATCA	8280
TATGCCAAGT	ACGCCCCCTA	TTGACGTCAA	TGACGGTAAA	TGGCCCCGCT	GGCATTATGC	8340
CCAGTACATG	ACCTTATGGG	ACTTTCCTAC	TTGGCAGTAC	ATCTACGTAT	TAGTCATCGC	8400
TATTACCATG	GTGATGCGGT	TTTGGCAGTA	CATCAATGGG	CGTGGATAGC	GGTTTGACTC	8460
ACGGGGATTT	CCAAGTCTCC	ACCCCAPTGA	CGTCAATGGG	AGTTTGTTTT	GGCACCAAAA	8520
TCAACGGGAC	TTTCCAAAAT	GTCGTAACAA	CTCCGCCCCA	TTGACGCAAA	TGGGCGGTAG	8580
GCGTGTACGG	TGGGAGGTCT	ATATAAGCAG	AGCTCTCTGG	CTAACTAGAG	AACCCACTGC	8640
TTACTGGCTT	ATCGAAATTA	ATACGACTCA	CTATAGGGAG	ACCCAAGCTT		8690

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7874 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

GGTACCAATT	TAAATTGATA	TCTCCTTAGG	TCTCGAGTCT	CTAGATAACC	GGTCAATCGA	60
TTGGAATTCT	TGCGGCCGCT	TGCTAGCACC	AAGGGCCCAT	CGGTCTTCCC	CCTGGCACCC	120
TCCTCCAAGA	GCACCTCTGG	GGGCACAGCG	GCCCTGGGCT	GCCTGGTCAA	GGACTACTTC	180
CCCGAACCGG	TGACGGTGTC	GTGGAATCA	GGCGCCCTGA	CCAGCGGCGT	GCACACCTTC	240
CCGGCTGTCC	TACAGTCTC	AGGACTCTAC	TCCCTCAGCA	GCGTGGTCAC	CGTGCCCTCC	300
AGCAGCTTGG	GCACCCAGAC	CTACATCTGC	AACGTGAATC	ACAAGCCCAG	CAACACCAAG	360
GTGGACAAGA	AAGTTGGTGA	GAGGCCAGCA	CAGGGAGGGA	GGGTGTCTGC	TGGAAGCCAG	420
GCTCAGCGCT	CCTGCCTGGA	CGCATCCCGG	CTATGCAGCC	CCAGTCCAGG	GCAGCAAGGC	480
AGGCCCCGTC	TGCCTCTTCA	CCCGGAGGCC	TCTGCCCGCC	CCACTCATGC	TCAGGGAGAG	540
GGTCTTCTGG	CTTTTTCCCC	AGGCTCTGGG	CAGGCACAGG	CTAGGTGCCC	CTAACCCAGG	600
CCCTGCACAC	AAAGGGGCAG	GTGCTGGGCT	CAGACCTGCC	AAGAGCCATA	TCCGGGAGGA	660
CCCTGCCCCCT	GACCTAAGCC	CACCCCAAAG	GCCAACTCT	CCACTCCCTC	AGCTCGGACA	720
CCTTCTCTCC	TCCCAGATTG	CAGTAACTCC	CAATCTTCTC	TCTGCAGAGC	CCAAATCTTG	780
TGACAAAAC	CACACATGCC	CACCGTGCCC	AGGTAAGCCA	GCCCAGGCCT	CGCCCTCCAG	840
CTCAAGGCGG	GACAGGTGCC	CTAGAGTAGC	CTGCATCCAG	GGACAGGCC	CAGCCGGGTG	900
CTGACACGTC	CACCTCCATC	TCTTCCTCAG	CACCTGAACT	CCTGGGGGGA	CCGTCACTCT	960
TCCTCTTCCC	CCCAAAACCC	AAGGACACCC	TCATGATCTC	CCGGACCCCT	GAGGTCACAT	1020
GCGTGGTGGT	GGACGTGAGC	CACGAAGACC	CTGAGGTCAA	GTTCAACTGG	TACGTGGACG	1080
GCGTGGAGGT	GCATAATGCC	AAGACAAAGC	CGCGGGAGGA	GCAGTACAAC	AGCACGTACC	1140
GTGTGGTCAG	CGTCCTCACC	GTCTGCACC	AGGACTGGCT	GAATGGCAAG	GAGTACAAGT	1200

GCAAGGTCTC	CAACAAAGCC	CTCCCAGCCC	CCATCGAGAA	AACCATCTCC	AAAGCCAAAG	1260
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CTGAGAGTGA	CCGCTGTACC	AACCTCTGTC	CCTACAGGGC	AGCCCCGAGA	ACCACAGGTG	1380
TACACCCTGC	CCCCATCCCG	GGATGAGCTG	ACCAAGAACC	AGGTCAGCCT	GACCTGCCTG	1440
GTCAAAGGCT	TCTATCCCAG	CGACATCGCC	GTGGAGTGGG	AGAGCAATGG	GCAGCCGGAG	1500
AACAACTACA	AGACCACGCC	TCCCGTGCTG	GACTCCGACG	GCTCCTTCTT	CCTCTACAGC	1560
AAGCTCACCG	TGGACAAGAG	CAGGTGGCAG	CAGGGGAACG	TCTTCTCATG	CTCCGTGATG	1620
CATGAGGCTC	TGCACAACCA	CTACACGCAG	AAGAGCCTCT	CCCTGTCTCC	GGGTAAATGA	1680
GTGCGACGGC	CGGCAAGCCC	CCGCTCCCCG	GGCTCTCGCG	GTCGCACGAG	GATGCTTGGC	1740
ACGTACCCCC	TGTACATACT	TCCCGGGCGC	CCAGCATGGA	AATAAAGCAC	CCAGCGCTGC	1800
CCTGGGCCCC	TGCGAGACTG	TGATGGTTCT	TTCCACGGGT	CAGGCCGAGT	CTGAGGCCTG	1860
AGTGGCATGA	GGGAGGCAGA	GCGGGTCCCA	CTGTCCCCAC	ACTGGCCCAG	GCTGTGCAGG	1920
TGTGCCTGGG	CCCCCTAGGG	TGGGGCTCAG	CCAGGGGCTG	CCCTCGGCAG	GGTGGGGGAT	1980
TTGCCAGCGT	GGCCCTCCCT	CCAGCAGCAC	CTGCCCTGGG	CTGGGCCACG	GGAAGCCCTA	2040
GGAGCCCCCTG	GGGACAGACA	CACAGCCCCCT	GCCTCTGTAG	GAGACTGTCC	TGTTCTGTGA	2100
GCGCCCCCTGT	CCTCCCGACC	TCCATGCCCA	CTCGGGGGCA	TGCTGGGGAT	GCGGTGGGCT	2160
CTATGGCTTC	TGAGGCGGAA	AGAACCAGCT	GGGGCTCTAG	GGGGTATCCC	CACGCGCCCT	2220
GTAGCGGCGC	ATTAAGCGCG	GCGGGTGTGG	TGGTACGCG	CAGCGTGACC	GCTACACTTG	2280
CCAGCGCCCT	AGCGCCCGCT	CCTTTCGCTT	TCTTCCCTTC	CTTCTCGCC	ACGTTTCGCCG	2340
GCTTTCCCCCG	TCAAGCTCTA	AATCGGGGCA	TCCCTTTAGG	GTTCCGATTT	AGTGCTTTAC	2400
GGCACCTCGA	CCCCAAAAAA	CTTGATTAGG	GTGATGGTTC	ACGTAGTGGG	CCATCGCCCT	2460
GATAGACGGT	TTTTCGCCCT	TTGACGTTGG	AGTCCACGTT	CTTTAATAGT	GGACTCTTGT	2520
TCCAAACTGG	AACAACACTC	AACCCTATCT	CGGTCTATTC	TTTTGATTTA	TAAGGGATTT	2580
TGGGGATTTT	GGCCTATTGG	TTAAAAAATG	AGCTGATTTA	ACAAAAATTT	AACGCGAATT	2640
AATTCTGTGG	AATGTGTGTC	AGTTAGGGTG	TGGAAAGTCC	CCAGGCTCCC	CAGGCAGGCA	2700
GAAGTAGTGA	AAGCATGCAT	CTCAATTAGT	CAGCAACCAT	AGTCCCGCCC	CTAACTCCGC	2760
CCATCCCGCC	CCTAACTCCG	CCCAGTTCGG	CCCATTCTCC	GCCCCATGGC	TGACTAATTT	2820
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CGCGCCAAAC	TTGACGGCAA	TCCTAGCGTG	AAGGCTGGTA	GGATTTTATC	CCCGCTGCCA	3000
TCATGGTTCG	ACCATTGAAG	TGCATCGTCG	CCGTGTCCCA	AAATATGGGG	ATTGGCAAGA	3060
ACGGAGACCT	ACCCTGGCCT	CCGCTCAGGA	ACGAGTTCAA	GTACTTCCAA	AGAATGACCA	3120
CAACCTCTTC	AGTGGAAGGT	AAACAGAATC	TGGTGATTAT	GGGTAGGAAA	ACCTGGTCTT	3180
CCATTCTCGA	GAAGAATCGA	CCTTTAAAGG	ACAGAATTAA	TATAGTTCTC	AGTAGAGAAC	3240
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TTATTGAACA	ACCGGAATTG	GCAAGTAAAG	TAGACATGGT	TTGGATAGTC	GGAGGCAGTT	3360
CTGTTTACCA	GGAAGCCATG	AATCAACCAG	GCCACCTTAG	ACTCTTTGTG	ACAAGGATCA	3420
TGCAGGAATT	TGAAAGTGAC	ACGTTTTTCC	CAGAAATTGA	TTTGGGGAAA	TATAAACTTC	3480
TCCCAGAATA	CCCAGGCGTC	CTCTCTGAGG	TCCAGGAGGA	AAAAGGCATC	AAGTATAAGT	3540
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GGAACCTTAC	TTCTGTGGTG	TGACATAATT	GGACAACTA	CCTACAGAGA	TTTAAAGCTC	3720
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CTTTTTAATT	TGTAAAGGGG	TTAATAAGGA	ATATTTGATG	TATAGTGCCT	TGACTAGAGA	4260
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TCCCCCTGAA	CCTGAAACAT	AAAATGAATG	CAATTGTTGT	TGTTAACTTG	TTTATTGCAG	4380
CTTATAATGG	TTACAAATAA	AGCAATAGCA	TCACAAATTT	CACAAATAAA	GCATTTTTTT	4440
CACTGCATTTC	TAGTTGTGGT	TTGTCCAAAC	TCATCAATGT	ATCTTATCAT	GTCTGGATCG	4500
GCTGGATGAT	CCTCCAGCGC	GGGGATCTCA	TGCTGGAGTT	CTTCGCCCAC	CCCAACTTGT	4560
TTATTGCAGC	TTATAATGGT	TACAAATAAA	GCAATAGCAT	CACAAATTTT	ACAAATAAAG	4620

CATTTTTTTC	ACTGCATTCT	AGTTGTGGTT	TGTCCAAACT	CATCAATGTA	TCTTATCATG	4680
TCTGTATACC	GTCGACCTCT	AGCTAGAGCT	TGGCGTAATC	ATGGTCATAG	CTGTTTCCCTG	4740
TGTGAAATTG	TTATCCGCTC	ACAATTCCAC	ACAACATACG	AGCCGGAAGC	ATAAAGTGTA	4800
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GAGGCGGTTT	GCGTATTGGG	CGCTCTTCCG	CTTCCTCGCT	CACTGACTCG	CTGCGCTCGG	4980
TCGTTTCGGCT	GCGGCGAGCG	GTATCAGCTC	ACTCAAAGGC	GGTAATACGG	TTATCCACAG	5040
AATCAGGGGA	TAACGCAGGA	AAGAACATGT	GAGCAAAAGG	CCAGCAAAAG	GCCAGGAACC	5100
GTAAAAAGGC	CGCGTTGCTG	GCGTTTTTCC	ATAGGCTCCG	CCCCCTGAC	GAGCATCACA	5160
AAAATCGACG	CTCAAGTCAG	AGGTGGCGAA	ACCCGACAGG	ACTATAAAGA	TACCAGGCGT	5220
TTCCCCCTGG	AAGCTCCCTC	GTGCGCTCTC	CTGTTCCGAC	CCTGCCGCTT	ACCGGATACC	5280
TGTCCGCTTT	TCTCCCTTCG	GGAAAGCGTG	CGCTTTCTCA	ATGCTCACGC	TGTAGGTATC	5340
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CCGACCGCTG	CGCCTTATCC	GGTAACTATC	GTCTTGAGTC	CAACCCGGTA	AGACACGACT	5460
TATCGCCACT	GGCAGCAGCC	ACTGGTAACA	GGATTAGCAG	AGCGAGGTAT	GTAGGCGGTG	5520
CTACAGAGTT	CTTGAAGTGG	TGGCCTAACT	ACGGCTACAC	TAGAAGGACA	GTATTTGGTA	5580
TCTGCGCTCT	GCTGAAGCCA	GTTACCTTCG	GAAAAAGAGT	TGGTAGCTCT	TGATCCGGCA	5640
AACAAACCAC	CGCTGGTAGC	GGTGGTTTTT	TTGTTTGCAA	GCAGCAGATT	ACGCGCAGAA	5700
AAAAAGGATC	TCAAGAAGAT	CCTTTGATCT	TTTCTACGGG	GTCTGACGCT	CAGTGGAACG	5760
AAAATCACG	TTAAGGGATT	TTGGTCATGA	GATTATCAAA	AAGGATCTTC	ACCTAGATCC	5820
TTTAAATTA	AAAATGAAGT	TTTAAATCAA	TCTAAAGTAT	ATATGAGTAA	ACTTGGTCTG	5880
ACAGTTACCA	ATGCTTAATC	AGTGAGGCAC	CTATCTCAGC	GATCTGTCTA	TTTCGTTTCAT	5940
CCATAGTTGC	CTGACTCCCC	GTCGTGTAGA	TAACACGAT	ACGGGAGGGC	TTACCATCTG	6000
GCCCCAGTGC	TGCAATGATA	CCGCGAGACC	CACGCTCACC	GGCTCCAGAT	TTATCAGCAA	6060
TAAACCAGCC	AGCCGGAAGG	GCCGAGCGCA	GAAGTGGTCC	TGCAACTTTA	TCCGCCTCCA	6120
TCCAGTCTAT	TAATTGTTGC	CGGGAAGCTA	GAGTAAGTAG	TTGCCAGTTT	AATAGTTTGC	6180
GCAACGTTGT	TGCCATTGCT	ACAGGCATCG	TGGTGTACAG	CTCGTCGTTT	GGTATGGCTT	6240
CATTCAGTCT	CGGTPTCCCAA	CGATCAAGGC	GAGTTACATG	ATCCCCCATG	TTGTGCAAAA	6300
AAGCGGTTAG	CTCCTTCGGT	CCTCCGATCG	TTGTCAGAAG	TAAGTTGGGC	GCAGTGTTAT	6360
CACTCATGGT	TATGGCAGCA	CTGCATAATT	CTCTTACTGT	CATGCCATCC	GTAAGATGCT	6420
TTTCTGTGAC	TGCTGAGTAC	TCAACCAAGT	CATTCTGAGA	ATAGTGTATG	CGGCGACCGA	6480
GTGTCTCTTG	CCCGGCGTCA	ATACGGGATA	ATACCGCGCC	ACATAGCAGA	ACTTTAAAG	6540
TGCTCATCAT	TGGAAAACGT	TCTTCGGGGC	GAAAACCTCT	AAGGATCTTA	CCGCTGTTGA	6600
GATCCAGTTC	GATGTAACCC	ACTCGTGCAC	CCAACGTATC	TTACGATCTT	TTTACTTTCA	6660
CCAGCGTTTC	TGGGTGAGCA	AAAACAGGAA	GGCAAAATGC	CGCAAAAAG	GGAATAAGGG	6720
CGACACGGAA	ATGTTGAATA	CTCATACTCT	TCCTTTTTTCA	ATATTATTGA	AGCATTTATC	6780
AGGGTTATTG	TCTCATGAGC	GGATACATAT	TTGAATGTAT	TTAGAAAAAT	AAACAAATAG	6840
GGGTTCCGCG	CACATTTCCC	CGAAAAGTGC	CACCTGACGT	CGACGGATCG	GGAGATCTGC	6900
TAGGTGACCT	GAGGCGCGCC	GGCTTCGAAT	AGCCAGAGTA	ACCTTTTTTTT	TTAATTTTAT	6960
TTTATTTTAT	TTTTGAGATG	GAGTTTGGCG	CCGATCTCCC	GATCCCCAT	GGTCGACTCT	7020
CAGTACAATC	TGCTCTGATG	CCGCATAGTT	AAGCCAGTAT	CTGCTCCCTG	CTTGTGTGTT	7080
GGAGGTCGCT	GAGTAGTGCG	CGAGCAAAAT	TTAAGCTACA	ACAAGGCAAG	GCTTGACCGA	7140
CAATTGCATG	AAGAATCTGC	TTAGGGTTAG	GCGTTTTGCG	CTGCTTCGCG	ATGTACGGGC	7200
CAGATATACG	CGTTGACATT	GATTATTGAC	TAGTTATTAA	TAGTAATCAA	TTACGGGGTC	7260
ATTAGTTCAT	AGCCCATATA	TGGAGTTCCG	CGTTACATAA	CTTACGGTAA	ATGGCCCCGC	7320
TGGCTGACCG	CCCAACGACC	CCCGCCCAT	GACGTCAATA	ATGACGTATG	TTCCCATAGT	7380
AACGCCAATA	GGGACTTTCC	ATTGACGTCA	ATGGGTGGAC	TATTTACGGT	AAACTGCCCA	7440
CTTGGCAGTA	CATCAAGTGT	ATCATATGCC	AAGTACGCCC	CCTATTGACG	TCAATGACGG	7500
TAAATGGCCC	GCCTGGCATT	ATGCCCAGTA	CATGACCTTA	TGGGACTTTC	CTACTTGCCA	7560
GTACATCTAC	GTATTAGTCA	TCGCTATTAC	CATGGTGTATG	CGGTTTTGGC	AGTACATCAA	7620
TGGGCGTGGA	TAGCGGTTTG	ACTCACGGGG	ATTTCCAAGT	CTCCACCCCA	TTGACGTCAA	7680
TGGGAGTTTG	TTTTGGCACC	AAAATCAACG	GGACTTTCCA	AAATGTCGTA	ACAACCTCCG	7740
CCCATTGACG	CAAATGGGCG	GTAGGCGTGT	ACGGTGGGAG	GTCTATATAA	GCAGAGCTCT	7800
CTGGCTAACT	AGAGAACCCA	CTGCTTACTG	GCTTATCGAA	ATTAATACGA	CTCACTATAG	7860
GGAGACCCAA	GCTT					7874

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 119 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	
1				5					10					15		
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Pro	Phe	Ser	Asp	Tyr	
			20					25					30			
Tyr	Met	Tyr	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35				40						45				
Ser	Tyr	Ile	Ser	Gln	Asp	Gly	Asp	Ile	Thr	Asp	Tyr	Ala	Asp	Ser	Val	
	50					55				60						
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Ser	Leu	Tyr	
65					70					75					80	
Leu	Gln	Met	Asn	Ser	Leu	Arg	Asp	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
			85						90					95		
Ala	Arg	Gly	Leu	Ala	Asp	Gly	Ala	Trp	Phe	Ala	Tyr	Trp	Gly	Gln	Gly	
			100					105					110			
Thr	Leu	Val	Thr	Val	Ser	Ser										
			115													

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 330 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	
1				5					10					15		
Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	
			20					25					30			
Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	
		35				40						45				
Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	
	50					55					60					
Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	
65					70					75					80	
Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	
			85					90					95			
Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	
			100					105					110			
Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	
			115					120					125			
Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	
			130			135						140				

Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp
145					150					155					160
Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu
			165						170						175
Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu
			180					185						190	
His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Asp	Lys	Val	Ser	Asn
		195					200					205			
Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly
	210					215					220				
Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Asp	Glu
225					230					235					240
Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr
			245						250					255	
Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn
		260						265					270		
Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe
	275						280					285			
Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn
	290					295					300				
Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr
305					310					315					320
Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys						
			325						330						

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 220 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys
1				5					10					15	
Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr
		20						25					30		
Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser
	35						40					45			
Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser
	50					55					60				
Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr
65					70					75					80
Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys
			85						90					95	
Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys
		100						105					110		
Pro	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg
	115						120					125			
Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly
	130				135						140				
Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro
145					150					155					160

Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser
				165					170					175	
Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln
			180					185					190		
Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His
		195					200					205			
Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys				
	210					215					220				

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 339 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Glu	Val	Asn	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
1				5					10					15	
Ser	Leu	Lys	Val	Ser	Cys	Val	Thr	Ser	Gly	Phe	Thr	Phe	Ser	Asp	Tyr
		20						25					30		
Tyr	Met	Tyr	Trp	Val	Arg	Gln	Thr	Pro	Glu	Lys	Arg	Leu	Glu	Trp	Val
		35					40					45			
Ala	Tyr	Ile	Ser	Gln	Gly	Gly	Asp	Ile	Thr	Asp	Tyr	Pro	Asp	Thr	Val
	50					55				60					
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Thr	Leu	Tyr
65					70					75				80	
Leu	Gln	Met	Ser	Arg	Leu	Lys	Ser	Glu	Asp	Thr	Ala	Met	Tyr	Tyr	Cys
			85						90				95		
Ala	Arg	Gly	Leu	Asp	Asp	Gly	Ala	Trp	Phe	Ala	Tyr	Trp	Gly	Gln	Gly
		100					105					110			
Thr	Leu	Val	Thr	Val	Ser	Val	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe
	115						120					125			
Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu
	130					135					140				
Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp
145					150					155				160	
Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu
			165						170				175		
Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser
		180						185				190			
Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro
		195					200					205			
Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys
	210					215					220				
Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val
225					230					235				240	
Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser
			245					250					255		
Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu
		260					265					270			
Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro
	275						280					285			

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
 290 295 300
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
 305 310 315 320
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
 325 330 335
 Pro Gly Lys

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8897 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

CTGCCTAGCC	CTCTAGACGA	TCCACTGGAC	TCCGCGCGGC	CGAAGCTTAT	CGGTCTCATT	60
GGAAAAAAAA	ATTAAATAA	AATAAAATAA	AAACTCTACC	TCAAACCGCG	GCTAGAGGGC	120
TAGGGGATAC	CAGCTGAGAG	TCATGTTAGA	CGAGACTACG	GCGTATCAAT	TCGGTCATAG	180
ACGAGGGACG	AACACACAAC	CTCCAGCGAC	TCATCACGCG	CTCGTTTTAA	ATTCGATGTT	240
GTTCCGTTCC	GAAGTGGCTG	TTAACGTACT	TCTTAGACGA	ATCCCAATCC	GCAAAACGCG	300
ACGAAGCGCT	ACATGCCCGG	TCTATATGCG	CAACTGTAAC	TAATAACTGA	TCAATAATTA	360
TCATTAGTTA	ATGCCCCAGT	AATCAAGTAT	CGGGTATATA	CCTCAAGGCG	CAATGTATTG	420
AATGCCATTT	ACCGGGCGGA	CCGACTGGCG	GGTTGCTGGG	GGCGGGTAAC	TGCAGTTATT	480
ACTGCATACA	AGGGTATCAT	TGCGGTTATC	CCTGAAAGGT	AACTGCAGTT	ACCCACCTGA	540
TAAATGCCAT	TTGACGGGTG	AACCGTCATG	TAGTTCACAT	AGTATACGGT	TCATGCGGGG	600
GATAACTGCA	GTTACTGCCA	TTTACCGGGC	GGACCGTAAT	ACGGGTCATG	TACTGGAATA	660
CCCTGAAAGG	ATGAACCGTC	ATGTAGATGC	ATAATCAGTA	GCGATAATGG	TACCACTACG	720
CCAAAACCGT	CATGTAGTTA	CCCGCACCTA	TCGCCAAACT	GAGTGCCCCCT	AAAGGTTTCAG	780
AGGTGGGGTA	ACTGCAGTTA	CCCTCAAACA	AAACCGTGTT	TTTAGTTGCC	CTGAAAGGTT	840
TTACAGCATT	GTTGAGCGCG	GGTAACTGCG	TTTACCCGCC	ATCCGCACAT	GCCACCCCTCC	900
AGATATATTC	GTCTCGAGAG	ACCGATTGAT	CTCTTGGGTG	ACGAATGACC	GAATAGCTTT	960
AATTATGCTG	AGTGATATCC	CTCTGGGTTC	GAACCATGGT	TAAATTTAAC	TATAGAGGAA	1020
TCCAGAGCTC	AGAGATCTAT	TGGCCAGTTA	GCTAACCTTA	AGAACGCCCG	CGAACGATCG	1080
GTGGTACCTC	AACACCAATT	CGAACCAAGG	AGGAACAGGA	ACAAAATTTT	CCACAGGTCA	1140
CACTTCACTT	AGACCACCTC	AGACCCCTC	CGAATCACGT	CGGACCTCCC	AGGGACTTTC	1200
AGAGGACACA	TTGGAGACCT	AAGTGAAAGT	CACTGATAAT	GTACATAACC	CAAGCGGTCT	1260
GAGGTCTCTT	CTCCGACCTC	ACCCAGCGTA	TGTAATCAGT	TCCACCACTA	TATTGGCTGA	1320
TAGGTCTGTG	ACATTTCCCA	GCTAAGTGGT	AGAGGTCTCT	GTTACGGTTC	TTGTGGGACA	1380
TGGACGTTTA	CTCGGCAGAC	TTCAGACTCC	TGTGTCGGTA	CATAATGACA	CGTTCTCCGG	1440
ACCTGCTGCC	CCGGACCAAA	CGAATGACCC	CGGTTCCCTG	AGACCAGTGC	CAGAGACATC	1500
GATCGTGTTT	CCCGGGTAGC	CAGAAGGGGG	ACCGTGGGAG	GAGGTTCTCG	TGGAGACCCC	1560
CGTGTGCGCG	GGACCCGACG	GACCAAGTTC	TGATGAAGGG	GCTTGGCCAC	TGCCACAGCA	1620
CCTTGAGTCC	GCGGGACTGG	TCGCCGCACG	TGTGGAAGGG	CCGACAGGAT	GTCAGGAGTC	1680
CTGAGATGAG	GGAGTCGTCG	CACCAGTGGC	ACGGGAGGTC	GTCGAACCCG	TGGGTCTGGA	1740
TGTAGACGTT	GCACTTAGTG	TTCGGGTCGT	TGTGGTTCCA	CCTGTTCTTT	CAACCACTCT	1800
CCGGTCGTGT	CCCTCCCTCC	CACAGACGAC	CTTCGGTCCG	AGTCGCGAGG	ACGGACCTGC	1860
GTAGGGCCGA	TACGTCGGGG	TCAGGTCCCG	TCGTTCCGTC	CGGGGCAGAC	GGAGAAGTGG	1920
GCCTCCGGAG	ACGGGCGGGG	TGAGTACGAG	TCCCTCTCCC	AGAAGACCGA	AAAAGGGGTC	1980
CGAGACCCGT	CCGTGTCCGA	TCCACGGGGA	TTGGGTCCGG	GACGTGTGTT	TCCCCGTCCA	2040
CGACCCGAGT	CTGGACGGTT	CTCGGTATAG	GCCCTCCTGG	GACGGGGACT	GGATTCCGGG	2100
GGGGTTTCCG	GTTTGAGAGG	TGAGGGAGTC	GAGCCTGTGG	AAGAGAGGAG	GGTCTAAGGT	2160
CATTGAGGGT	TAGAAGAGAG	ACGTCTCGGG	TTTAGAACAC	TGTTTTGAGT	GTGTACGGGT	2220

GGCACGGGTC	CATTCGGTCCG	GGTCCGGAGC	GGGAGGTCGA	GTTCCGCCCT	GTCCACGGGA	2280
TCTCATCGGA	CGTAGGTCCC	TGTGTGGTGC	ACCCATGGTT	GTACAGGCCCT	CGGTGTACCT	2340
GTCTCCGGCC	GAGCCGGGTG	GGAGACGGGA	CTCTCACTGG	CGACATGGTT	GGAGACAGGG	2400
ATGTCCCGTC	GGGGCTCTTG	GTGTCCACAT	GTGGGACGGG	GGTAGGGCCC	TACTCGACTG	2460
GTTCTTGGTC	CAGTCGGACT	GGACGGACCA	GTTTCCGAAG	ATAGGGTCGC	TGTAGCGGCA	2520
CCTCACCTC	TCGTTACCCG	TCGGCCTCTT	GTTGATGTTT	TGGTGCGGAG	GGCACGACCT	2580
GAGGTGCCG	AGGAAGAAGG	AGATGTCGTT	CGAGTGGCAC	CTGTTCTCGT	CCACCGTCGT	2640
CCCCTTGCAG	AAGAGTACGA	GGCACTACGT	ACTCCGAGAC	GTGTTGGTGA	TGTGCGTCTT	2700
CTCGGAGAGG	GACAGAGGCC	CATTTACTCA	CGCTGCCGGC	CGTTCGGGGG	CGAGGGGCCC	2760
GAGAGCGCCA	GCGTGCTCCT	ACGAACCGTG	CATGGGGGAC	ATGTATGAAG	GGCCCGCGGG	2820
TCGTACCTTT	ATTTTCGTGGG	TCGCGACGGG	ACCCGGGGAC	GCTCTGACAC	TACCAAGAAA	2880
GGTGCCCACT	CCGGCTCAGA	CTCCGGACTC	ACCGTACTCC	CTCCGTCTCG	CCCAGGGTGA	2940
CAGGGGTGTG	ACCGGGTCCG	ACACGTCCAC	ACGGACCCGG	GGGATCCAC	CCCAGTCCG	3000
TCCCCGACGG	GAGCCGTCCC	ACCCCTAAA	CGGTCCGACC	GGGAGGGAGG	TCGTCTGTGA	3060
CGGGACCCGA	CCCGGTGCC	TTCGGGATCC	TCGGGGACCC	CTGTCTGTGT	GTCGGGGACG	3120
GAGACATCCT	CTGACAGGAC	AAGACACTCG	CGGGGACAGG	AGGGCTGGAG	GTACGGGTGA	3180
GCCCCGTAC	GGATCAGGTA	CACGCATCCC	TGTCCGGGAG	GGAGTGGGTA	GATGGGGGTG	3240
CCGTGATTGG	GGACCGACGG	GACGGGTCGG	AGCGTGGGCG	TACCCCTGTG	TTGGCTGAGG	3300
CCCCGTACG	TGAGAGCCCC	GGACACCTCC	CTGACCACGT	CTACGGGTGT	GTGTGTGAGT	3360
CGGGTCTGGG	CAAGTTGTTT	GGGGCGTGAC	TCCAACCGGC	CGGTGTGCCG	GTGGTGTGTG	3420
TGTGCACGTG	CGGAGTGTGT	GCCTCGGAGT	GGGCCCCTTT	GACGTGTCTG	GGGTCTGGTC	3480
TCGTTCAGG	AGCGTGTGCA	CTTGTGAGGA	GCCTGTGTCC	GGGGGTGCTC	GGGGTGCGCC	3540
GTGGAGTTCC	GGGTGCTCGG	AGAGCCGTCG	AAGAGGTGTA	CGACTGGACG	AGTCTGTTTG	3600
GGTCCGGAGG	AGAGTGTTC	CACGGGGACG	TCGGCGGTGT	GTGTGTGTCC	CCTAGTGTGT	3660
GGTGCAGTGC	AGGGACCGGG	ACCGGGTGAA	GGGTACCGCG	GGGAAGGGAC	GTCTGCCTA	3720
GTCGGAGTGC	ACACGGAAGA	TCAACGGTCG	GTAGACAACA	AACGGGGAGG	GGGCACGGAA	3780
GGAACTGGGA	CCTTCCACGG	TGAGGGTGAC	AGGAAAGGAT	TATTTTACTC	CTTTAACGTA	3840
GCGTAACAGA	CTCATCCACA	GTAAGATAAG	ACCCCCACCC	CCACCCCGTC	CTGTCTGTCC	3900
CCCTCCCTAAC	CCTTCTGTTA	TCGTCCGTAC	GACCCCTACG	CCACCCGAGA	TACCGAAGAC	3960
TCCGCCCTTT	TTGGTTCGACC	CCGAGATCCC	CCATAGGGGT	GCGCGGGACA	TCGCCGCGTA	4020
ATTTCGCGCCG	CCCACACCAC	CAATGCGCGT	CGCACTGGCG	ATGTGAACGG	TCGCGGGATC	4080
GCGGGCGAGG	AAAGCGAAAG	AAGGGAAGGA	AAGAGCGGTG	CAAGCGGCC	GGAGAGTTTT	4140
TTCCCTTTTT	TTCGTACGTA	GAGTTAATCA	GTCGTTGGTA	TCAGGGCGGG	GATTGAGGCG	4200
GGTAGGGCGG	GGATTGAGGC	GGGTCAAGGC	GGTAAGAGG	CGGGGTACCG	ACTGATTAAA	4260
AAAAATAAAT	ACGTCTCCGG	CTCCGGCGGA	GCCGGAGACT	CGATAAGGTC	TTCATCACTC	4320
CTCCGAAAAA	ACCTCCGGAT	CCGAAAACGT	TTTTTCGAACC	TGTCGAGTCC	CGACGCTAAA	4380
GCGCGGTTTG	AACTGCCGTT	AGGATCGCAC	TTCCGACCAT	CCTAAAATAG	GGGCGACGGT	4440
AGTACCAAGC	TGGTAACTTG	ACGTAGCAGC	GGCACAGGGT	TTTATACCCC	TAACCGTTCT	4500
TGCCTCTGGA	TGGGACCGGA	GGCGAGTCCT	TGCTCAAGTT	CATGAAGGTT	TCTTACTGGT	4560
GTTGGAGAAG	TCACCTTCCA	TTTGTCTTAG	ACCACTAATA	CCCATCCTTT	TGGACCAAGA	4620
GGTAAGGACT	CTTCTTAGCT	GGAAATTTCC	TGTCTTAATT	ATATCAAGAG	TCATCTCTTG	4680
AGTTTCTTGG	TGGTGCTCCT	CGAGTAAAAG	AACGGTTTTT	AAACCTACTA	CGGAATCTTG	4740
AATAACTTGT	TGGCCTTAAC	CGTTCATTTT	ATCTGTACCA	AACCTATCAG	CCTCCGTCAA	4800
GACAAATGGT	CCTTCGGTAC	TTAGTTGGTC	CGGTGGAATC	TGAGAAACAC	TGTTCCCTAGT	4860
ACGTCCCTTAA	ACTTTCACCTG	TGCAAAAAGG	GTCTTTAACT	AAACCCCTTT	ATATTTGAAG	4920
AGGGTCTTAT	GGGTCCGCAG	GAGAGACTCC	AGGTCCCTCT	TTTTCCGTAG	TTCATATTCA	4980
AACTTCAGAT	GCTCTTCTTT	CTGATTGTCC	TTCTACGAAA	GTTCAAGAGA	CGAGGGGAGG	5040
ATTTTCGATAC	GTAATAATAT	TCTGGTACCC	TGAAAACGAC	CGAAATCTAG	AGAAACACTT	5100
CCTTGGAATG	AAGACACCAC	ACTGTATTAA	CCTGTTTGAT	GGATGTCTCT	AAATTTTCGAG	5160
ATTCCATTTA	TATTTTAAAA	ATTACATAT	TACACAATTT	GATGACTAAG	ATTAACAAAC	5220
ACATAAAATC	TAAGGTTGGA	TACCTTGACT	ACTTACCCTC	GTCACCACCT	TACGGAAATT	5280
ACTCCTTTTG	GACAAAACGA	GTCTTCTTTA	CGGTAGATCA	CTACTACTCC	GATGACGACT	5340
GAGAGTTGTA	AGATGAGGAG	GTTTTTCTTT	CTCTTTCCAT	CTTCTGGGGT	TCCTGAAAGG	5400
AAGTCTTAAC	GATTCAAAAA	ACTCAGTACG	ACACAAATCA	TTATCTTGAG	AACGAACGAA	5460
ACGATAAATG	TGGTGTTCCT	TTTTTCGACG	TGACGATATG	TTCTTTTAAAT	ACCTTTTAT	5520
AAGACATTGG	AAATATTTCAT	CCGTATTGTC	AATATTAGTA	TTGTATGACA	AAAAAGAATG	5580
AGGTGTGTCC	GTATCTCACA	GACGATAATT	ATTGATACGA	GTTTTTAACA	CATGGAAATC	5640

GAAAAATTAA	ACATTTCCCC	AATTATTCCCT	TATAAACTAC	ATATCACGGA	ACTGATCTCT	5700
AGTATTAGTC	GGTATGGTGT	AAACATCTCC	AAAATGAACG	AAATTTTTTTG	GAGGGTGTGG	5760
AGGGGGACTT	GGACTTTGTA	TTTTACTTAC	GTTAAACAACA	ACAAATTGAAC	AAATAACGTC	5820
GAATATTACC	AATGTTTATT	TCGTTATCGT	AGTGTTTAAA	GTGTTTATTT	CGTAAAAAAA	5880
GTGACGTAAG	ATCAACACCA	AACAGGTTTG	AGTAGTTACA	TAGAATAGTA	CAGACCTAGC	5940
CGACCTACTA	GGAGGTCGCG	CCCCTAGAGT	ACGACCTCAA	GAAGCGGGTG	GGGTTGAACA	6000
AATAACGTCG	AATATTACCA	ATGTTTATTT	CGTTATCGTA	GTGTTTAAAG	TGTTTATTTT	6060
GTAAAAAAG	TGACGTAAGA	TCAACACCAA	ACAGGTTTGA	GTAGTTACAT	AGAATAGTAC	6120
AGACATATGG	CAGCTGGAGA	TCGATCTCGA	ACCGCATTAG	TACCAGTATC	GACAAAGGAC	6180
ACACTTTTAA	AATAGGCGAG	TGTTAAGGTG	TGTTGTATGC	TCGGCCTTCG	TATTTTACAT	6240
TTCCGGACCCC	ACGGATTACT	CACTCGATTG	AGTGTAATTA	ACGCAACGCG	AGTGACGGGC	6300
GAAAGGTCAG	CCCTTTGGAC	AGCACGGTCG	ACGTAATTAC	TTAGCCGGTT	GCGCGCCCCCT	6360
CTCCGCCAAA	CGCATAACCC	GCGAGAAGGC	GAAGGAGCGA	GTGACTGAGC	GACGCGAGCC	6420
AGCAAGCCGA	CGCCGCTCGC	CATAGTCGAG	TGAGTTTCCG	CCATTATGCC	AATAGGTGTC	6480
TTAGTCCCCCT	ATTGCGTCCT	TTCTTGTACA	CTCGTTTTC	GGTCGTTTTC	CGGTCCTTGG	6540
CATTTTTCCG	GCGCAACGAC	CGCAAAAAGG	TATCCGAGGC	GGGGGACTG	CTCGTAGTGT	6600
TTTTAGCTGC	GAGTTCAGTC	TCCACCGCTT	TGGGCTGTCC	TGATATTTCT	ATGGTCCGCA	6660
AAGGGGGACC	TTGAGGGGAG	CACGCGAGAG	GACAAGGCTG	GGACGCGGAA	TGGCCTATGG	6720
ACAGGCGGAA	AGAGGGAAGC	CCTTCGCACC	GCGAAAGAGT	TACGAGTGCG	ACATCCATAG	6780
AGTCAAGCCA	CATCCAGCAA	GCGAGGTTTC	ACCCGACACA	CGTGCTTGGG	GGGCAAGTCG	6840
GGCTGGCGAC	GCGGAATAGG	CCATTGATAG	CAGAACTCAG	GTTGGGCCAT	TCTGTGCTGA	6900
ATAGCGGTGA	CCGTCGTCGG	TGACCATTTG	CCTAATCGTC	TCGCTCCATA	CATCCGCCAC	6960
GATGTCTCAA	GAACCTTACC	ACCGGATTGA	TGCCGATGTG	ATCTTCCTGT	CATAAACCAT	7020
AGACGCGAGA	CGACTTCGGT	CAATGGAAGC	CTTTTTCTCA	ACCATCGAGA	ACTAGGCCGT	7080
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TGTCAATGGT	TACGAATTAG	TCACTCCGTG	GATAGAGTGG	GTAGACAGAT	AAAGCAAAGTA	7380
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CGGGGTCAAG	ACGTTACTAT	GCGCTCTGG	GTGCGAGTGG	CCGAGGTCTA	AATAGTCGTT	7500
ATTTGGTCCG	TCGGCCTTCC	CGCTTCGCT	CTTACCAGG	ACGTTGAAAT	AGGCGGAGGT	7560
AGGTCAGATA	ATTAACAACG	GCCCTTCGAT	CTCATTCATC	AAGCGGTCAA	TTATCAAACG	7620
CGTTGCAACA	ACGGTAACGA	TGTCCGTAGC	ACCACAGTGC	GAGCAGCAAA	CCATACCGAA	7680
GTAAGTCGAG	GCCAAGGGTT	GCTAGTTCCG	CTCAATGTAC	TAGGGGGTAC	AACACGTTTT	7740
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GTGAGTACCA	ATACCGTCGT	GACGTATTAA	GAGAATGACA	GTACGGTAGG	CATTCTACGA	7860
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ACGAGTAGTA	ACCTTTTGCA	AGAAGCCCCG	CTTTTGAGAG	TTCTTAGAAT	GGCGACAACT	8040
CTAGGTCAAG	CTACATTGGG	TGAGCACGTG	GGTTGACTAG	AAGTCGTAGA	AAATGAAAGT	8100
GGTCGCAAA	ACCACTCGT	TTTTGTCCCT	CCGTTTACG	GCGTTTTTTC	CCTTATTCCT	8160
GCTGTGCCTT	TACAACTTAT	GAGTATGAGA	AGGAAAAAGT	TATAATAACT	TCGTAAATAG	8220
TCCCAATAAC	AGAGTACTCG	CCTATGTATA	AACTTACATA	AATCTTTTTA	TTTGTATTAT	8280
CCCAAGGCGC	GTGTAAAGGG	GCTTTTCACG	GTGGACTGCA	G		8321

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7874 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

CCATGGTTAA	ATTTAACTAT	AGAGGAATCC	AGAGCTCAGA	GATCTATTGG	CCAGTTAGCT	60
AACCTTAAGA	ACGCCGCGCA	ACGATCGTGG	TTCCCCGGGT	GCCAGAAGGG	GGACCGTGGG	120
AGGAGGTTCT	CGTGGAGACC	CCCGTGTGCG	CGGGACCCGA	CGGACCAGTT	CCTGATGAAG	180
GGGCTTGGCC	ACTGCCACAG	CACCTTGAGT	CCGCGGGACT	GGTCGCCGCA	CGTGTGGAAG	240
GGCCGACAGG	ATGTCAGGAG	TCCTGAGATG	AGGGAGTCGT	CGCACCAGTG	GCACGGGAGG	300
TCGTGGAACC	CGTGGGTCTG	GATGTAGACG	TTGCACTTAG	TGTTCCGGTC	GTTGTGGTTC	360
CACCTGTTCT	TTCAACCACT	CTCCGGTCGT	GTCCCTCCCT	CCCACAGACG	ACCTTCGGTC	420
CGAGTCGCGA	GGACGGACCT	GCGTAGGGCC	GATACGTCGG	GGTCAGGTCC	CGTCGTTCCG	480
TCCGGGGCAG	ACGGAGAAGT	GGGCCTCCGG	AGACGGGCGG	GGTGAGTACG	AGTCCCTCTC	540
CCAGAAGACC	GAAAAAGGGG	TCCGAGACCC	GTCCGTGTCC	GATCCACGGG	GATTGGGTCC	600
GGGACGTGTG	TTTCCCCGTC	CACGACCCGA	GTCTGGACGG	TTCTCGGTAT	AGGCCCTCCT	660
GGGACGGGGA	CTGGATTCCG	GTGGGGTTTC	CGGTTTGAGA	GGTGAGGGAG	TCGAGCCTGT	720
GGAAGAGAGG	AGGGTCTAAG	GTCATTGAGG	GTTAGAAGAG	AGACGTCTCG	GGTTTAGAAC	780
ACTGTTTTGA	GTGTGTACGG	GTGGCACGGG	TCCATTCCGT	CGGGTCCGGA	GCGGGAGGTC	840
GAGTTCCGCC	CTGTCCACGG	GATCTCATCG	GACGTAGGTC	CCTGTCCGGG	GTCGGCCAC	900
GACTGTGCAG	GTGGAGGTAG	AGAAGGAGTC	GTGGACTTGA	GGACCCCCCT	GGCAGTCAGA	960
AGGAGAAGGG	GGGTTTTGGG	TTCCGTGTTG	AGTACTAGAG	GGCCTGGGGA	CTCCAGTGTA	1020
CGCACCACCA	CCTGCACTCG	GTGCTTCTGG	GACTCCAGTT	CAAGTTGACC	ATGCACCTGC	1080
CGCACCTCCA	CGTATTACGG	TTCTGTTTCG	GCGCCCTCCT	CGTCATGTTG	TCGTGCATGG	1140
CACACCAGTC	GCAGGAGTGG	CAGGACGTGG	TCCTGACCGA	CTTACCGTTC	CTCATGTTCA	1200
CGTTCCAGAG	GTTGTTTCGG	GAGGGTCGGG	GGTAGCTCTT	TTGGTAGAGG	TTTCGGTTTC	1260
CACCCTGGGC	ACCCACGCT	CCCGGTGTAC	CTGTCTCCGG	CCGAGCCGGG	TGGGAGACGG	1320
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CAGTTTCCGA	AGATAGGGTC	GCTGTAGCGG	CACCTACACC	TCTCGTTACC	CGTCGGCCCT	1500
TTGTTGATGT	TCTGGTGCAG	AGGGCACGAC	CTGAGGCTGC	CGAGGAAGAA	GGAGATGTCT	1560
TTGAGTGGG	ACCTGTTCTC	GTCCACCGTC	GTCCCTTTGC	AGAAGAGTAC	GAGGCACTAC	1620
GTACTCCGAG	ACGTGTTGGT	GATGTGCGTC	TTCTCGGAGA	GGGACAGAGG	CCCATTACT	1680
CACGCTGCCG	GCCGTTCCGG	GGCGAGGGGC	CCGAGAGCGC	CAGCGTGCTC	CTACGAACCG	1740
TGCATCGGGG	ACATGTATGA	AGGGCCCGCG	GGTCGTACCT	TTATTTCTGT	GGTCGCGACG	1800
GGACCTCGGG	ACGCTCTGAC	ACTACCAAGA	AAGGTGCCCA	GTCCGGCTCA	GACTCCGGAC	1860
TCACCGTACT	CCCTCCGTCT	CGCCACGGGT	GACAGGGGTG	TGACCGGGTC	CGACACGTCC	1920
ACACGGACCC	GGGGGATCCC	ACCCCGAGTC	GGTCCCGGAC	GGGAGCCGTC	CCACCCCTTA	1980
AACGGTCGCA	CCGGGAGGGA	GGTCGTCTGT	GACGGGACCC	GACCCGGTGC	CCTTCGGGAT	2040
CCTCGGGGAC	CCCTGTCTGT	GTGTCCGGGA	CGGAGACATC	CTCTGACAGG	ACAAGACACT	2100
CGCGGGGACA	GGAGGGCTGG	AGGTACGGGT	GAGCCCCCGT	ACGACCCCTA	CGCCACCCGA	2160
GATACCGAAG	ACTCCGCCTT	TCTTGGTCTG	CCCCGAGATC	CCCCATAGGG	GTGCGCGGGA	2220
CATCGCCGCG	TAATTCGCGC	CGCCACACCC	ACCAATGCGC	GTCGCACTGG	CGATGTGAAC	2280
GGTCGCGGGA	TCGCGGGCGA	GGAAAGCGAA	AGAAGGGAAG	GAAAGAGCGG	TGCAAGCGGC	2340
CGAAAGGGGC	AGTTCGAGAT	TTAGCCCCGT	AGGGAAATCC	CAAGGCTAAA	TCACGAAATG	2400
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AGGTTTGACC	TTGTTGTGAG	TTGGGATAGA	GCCAGATAAG	AAAACATAAT	ATTCCCTAAA	2580
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TTAAGACACC	TTACACACAG	TCAATCCAC	ACCTTTCAGG	GGTCCGAGGG	GTCCGTCCGT	2700
CTTCATACGT	TTCTGACGTA	GAGTTAATCA	GTCGTTGGTA	TCAGGGCGGG	GATTGAGGCG	2760
GGTAGGGCGG	GGATTGAGGC	GGGTCAAGGC	GGGTAAGAGG	CGGGGTACCG	ACTGATTAAA	2820
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CTCCGAAAAA	ACCTCCGGAT	CCGAAAACGT	TTTTCGAACC	TGTCGAGTCC	CGACGCTAAA	2940
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AGTACCAAGC	TGGTAACCTG	ACGTAGCAGC	GGCACAGGGT	TTTATACCCC	TAACCGTTCT	3060
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TCCCAATAAC	AGAGTACTCG	CCTATGTATA	AACTTACATA	AATCTTTTTTA	TTTGTTTATC	6840
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CCTCTGGGTT	CGAA					7874

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